The Builder.

VOL. XXVIII.—No. 1440.

What do we pay for Education?

THE advantages which man has over beast, in safety, in material comfort, in the means of protecting, prolonging, and enjoying life, are hardly greater than those which the cultured and instructed man has over the ignorant savage. Nor does this apply to individuals alone; nor need the contrast be limited to that between the philosopher and the barbarian. It is true in the case of nations. The harvest-moon of 1870 has witnessed the inscription, in letters of fire more terrific than those which startled the feast of the Chaldean king, of a warning that we can ill afford to neglect. Whatever be the outcome of the sanguinary campaign of the present summer, one lesson is plain. The primacy of Europe is not to be retained by the mere possession of the noblest or most brilliant qualities, in the absence of patient and conscientious culture. The steady application of the German race to the great business of education, for the life-time of two generations, has enabled it to give a new illustration of the ancient fable of the hare and the tortoise. But the once sluggish animal, in this instance, emulating the wonderful metamorphose of its relative, the frog, has developed the wings of the dragon.

Not less ominous, to those of us who have known how to read contemporary history, than any phenomenon of the day, has been the persistent manner in which, for the last eighteen years, the mind of France has been studiously misdirected to the cultivation and the increase of luxury. A display that no honest earnings could afford, has been kept up by systematic corruption, and, at the hour of extreme need, the noble army of France has collapsed for want of the due application of that supply which, freely voted by the nation, has been diverted to the service of the *demi monde* of Paris. When a nation thus purposely demoralised comes in contact with a patient, self-cultivating, honestly working community of equal magnitude, the result cannot long remain doubtful. No gifts, however divine, profit those who neglect to cultivate them.

What, then, every Englishman ought to ask, are *we* doing to maintain our own national dignity? What is our organisation, compared with that of our German cousins on the Continent? What is our education, compared with that of educated Prussia?

A report from that fraction of our complex administration which replaces, clumsily and inefficiently enough, the Ministry of Public Instruction which is common to most civilised countries, has just issued from the press. The Lords of the Committee of her Majesty's Privy Council on Education have humbly presented to her Majesty their "Report of the Science and Art Department for the year 1869." From this document, and from the "estimates for the Civil Services for the year ending March, 1871, Education, Science, and Art," we must strive to draw a reply to so momentous a question.

The first point, however, that strikes an inquirer, who notes that somewhat less than a fortieth part of our public expenditure is devoted to educational purposes, is, that the administrative action only scratches the outside of the subject, instead of piercing to the centre. We are not speaking of the direct action of the State in training those who are to form its citizens; but of the yet more primary and elementary duty of collecting information on the subject. Where are we to turn for knowledge as to what is actually being done in the United Kingdom by way of education? What do the Lords of the Committee of her Majesty's Privy Council observe on the subject? What does any one know?

Thus much, indeed, we have been told and told again, in and out of Parliament, in reports, by inspectors, in blue books, and, ugly fact, in certain trade returns and commercial bargains. We are not doing what we ought to do. We are doing far less than our neighbours. So admitted is this fact, that we are now voting hard upon two millions sterling to supplement the grievous deficiencies of our general method of education. But we are yet left almost totally in the dark as to the extent, the resources, or the upshot, of that national system, if system it may be called, which has so notoriously broken down.

The wisdom and the piety of our ancestors have consecrated, from time to time, no inconsiderable part of the national wealth to the purposes of education, regarded in its broadest sense. The church, to be in any way fitted for the wants of the day, should be a great educational institution. To inculcate dogma, which men seem to take as the essence, is but a very minute portion of the duties, of a religious organisation. There are many who hold that, the more there is of true religion in a community, the less there will be of dogma. At all events, few of those who are familiar with history, past or contemporary, will deny that the converse proposition holds true. The teaching and training of the entire nation, boys and girls, men and women, the true "mathematics," the general course of all that is to be learned—in morals, in science, in the natural history of nations—that great primer of political science,—all this is the function for the performance of which churches were endowed, at a time when the sum of human knowledge was comparatively trifling, even by the side of its present very imperfect state.

We do not insist upon that care to relieve the poor, to visit the sick, and generally to supplement the words of truth by the acts of mercy, which formed charges on the resources of the mediæval and of the primitive churches. The point we wish to bring into relief is this: we have a very large annual sum,—in land, in charges, in rates, in Parliamentary votes, in private subscriptions,—professedly applied to the education of the people. We cannot but be aware, from the results, that the application has not been as successful as could be desired. We know that the very gravest questions press for solution as to the primary principles on which such application should be made. And yet we are content to remain without that statistical information which is the very first requisite to enable us to understand our position; to say nothing whatever about improving it. We now offer some two millions a year to eke out a very deplorably deficient self-acting, or rather non-acting, system of education. But whether two,—or twice two,—or ten, or what number of millions are spent on the duty which we thus largely supplement,—who is there to tell us? We only know the educational state of England by its fruit, or rather by its marked absence of fruit. But we know that there was an old idea that some tenth part of the national income should be devoted to what are now called educational purposes; and we have a very shrewd guess that an enormous annual outlay must be, at this moment, perilously ill-directed.

Could we sum in one full line the annual income of universities, churches of all denominations, hospitals and charities, colleges, and schools, we should have no occasion to blush for the figure. That for which we should blush is, that we spend so much, and have so little to show for it. To know what we actually do spend in the teaching and training of the nation is a primary and imperative need.

Reverting to that partial information which is furnished by the Report of the Science and Art Department of the Committee of Council on Education—that is to say, of Lord de Grey and Ripon and Mr. Forster, with Mr. Cole as secretary,—we are happy to find that a suggestion, which was, we believe, first published in our columns, has been carried out in the present volume. Maps of England and Wales, of Scotland, and of Ireland, are contained in the Appendix to the Report, which show, by red and black dots (complemented by ill-devised lettering), the localities in which schools are now existing in connexion with the Department.

The expenditure reported for the financial year 1869–1870 (exclusive of the vote for the Geological Society) was 201,552*l.*, being 2,851*l.* more than that for the previous year, which amounted to 198,701*l.*

The approximate total number of persons who have availed themselves of any of the different means of obtaining instruction afforded by the Department in 1869, is 2,372,000. This is an increase of 596,000, or 33½ per cent., over the corresponding total for 1868, which was 1,775,400. But as a mere stroll through the South Kensington Museum counts for one of these instances of information obtained by the public, we must not attach too much importance to the educational profit derived by this million and three-quarters of people from the labours of the Department.

The total number of visitors registered as attending the South Kensington Museum during the year 1869 is 1,043,654, against 881,076 in 1868. The total monthly average has risen from 73,423 in 1868, to 86,971 in 1869, and this notwithstanding the regrettable circumstance that the attendance on student days has declined from the monthly average of 9,542, to that of 9,154. In 1867 the students' monthly average was 10,843. The attendances in the holiday weeks of 1869 have been far larger than in any previous year, amounting to 54,354 for Easter week, 40,868 for Whitsun week, and 51,259 for Christmas week, against the respectively corresponding numbers of 35,241, of 27,591, and of 48,037 in 1868; and of 26,594, of 22,557, and of 21,790 in 1867.

The number of persons receiving instruction in science applicable to industry, under the auspices of the Department, has increased from 15,010 in 1868 to 21,500 in 1869. The number of individuals instructed in art has increased from 123,562 in 1868 to 157,198 in 1869, or at the rate of 27 per cent.—the increase in the science schools being upwards of 43 per cent. The Royal School of Mines numbers only seventeen regular and ninety-three occasional students; the Royal College of Chemistry, 136 students; the Royal School of Naval Architecture, forty; and the Metallurgical Laboratory, thirty-five. The evening lectures have been attended by 1,617 artizans and school teachers; and 253 science teachers attended the special course of lectures provided for their instruction. There have been thirty-two students at the Royal College of Science, in Ireland, and 5,773 persons have attended the various courses of lectures delivered in connexion with the Department in Dublin. The attendance at the evening popular lectures delivered in the Edinburgh Museum of Science and Art during the Session 1868-1869 was 1,386.

Thus the total number of persons who have received instruction as students, or as attendants

upon lectures, in connexion with the Science and Art Department in 1869, is upwards of 187,000; a total exceeding that of the preceding year by 41,300, or 28 per cent. The increase in 1868 over 1867 was about 18 per cent.; so that the rate of progressive increase, as compared with the former year, shows an acceleration of more than 30 per cent. The general march of the public scientific and artistic education of the country may be readily appreciated from the above statistical summary.

To the above-stated sum of 201,552*l.*, increased, in the Parliamentary estimates, by the addition of the geological survey, to 218,336*l.*, have to be added some other items of educational cost for Great Britain, and four items for Ireland, in order to make up the annual sum paid by the nation for education other than elementary. These items are as follow:—British Museum, 90,765*l.*; National Gallery, 16,181*l.*; National Portrait Gallery, 1,800*l.*; Learned Societies, 12,370*l.*; University of London, 9,577*l.*; Endowed schools commission (which is an administrative rather than an educational charge), 12,220*l.*; Universities, &c., in Scotland, 18,644*l.*; Board of Manufactures, Scotland, 2,100*l.*; Irish National Gallery, 1,990*l.*; Royal Irish Academy, 1,684*l.*; Queen's University, 3,240*l.*; and Queen's Colleges, 4,265*l.* Oxford and Cambridge, as endowed universities, do not figure in this list. The total annual outlay thus incurred amounts to 393,072*l.*

With regard to elementary education, the sums voted for the year 1870-71, amount to 914,721*l.*, for Great Britain, and to 381,897*l.* for Ireland. A comparison of these sums with the population of the United Kingdom gives some noteworthy facts.

The number of children in Great Britain between the years of 3 and 15 may be taken, in round numbers, at 7,000,000. (The census of 1861 gave 6,323,566.) Of these, 1,300,000 are between 3 and 5; 3,000,000 between 5 and 10; and 2,700,000 between 10 and 15 years of age. Of the 4,300,000 below 10 years old, 493,852 were presented for examination under the standards in 1869. Of the 2,700,000 children from 10 to 15, 310,213 were so presented. The total number of children over six years of age that were qualified for presentation in this period was 991,449. The total number of children on the school-books for the year was 1,797,388, and the average number actually attending school was 1,245,027. Thus our public primary education may be said to contemplate the training of one-fourth, to attempt the training of one-sixth, and to effect (more or less satisfactorily) the training of one-seventh, of the children below 15 years of age. The cost of this education amounted, for the year 1869-70, to 840,711*l.*, being at the rate of about 17*s.* 3d. per head for the children actually taught, or of 12*s.* 8d. per head for the average attendance on the schools. This, of course, is only that portion of the expense which is directly borne by the State.

The vote for the year 1870-71 for public education is 914,721*l.* An annual increase may be reckoned on; so that we may speak of our current State provision for primary education as involving an annual expenditure of a million, in imparting the simplest rudiments of instruction to one million and a half out of our seven millions of children. Of those so instructed, moreover, three-eighths are of an age fitted to receive not primary, but secondary, instruction.

Our national influence over the training of the 2,700,000 children between ten and fifteen is at present confined to the operations of the Science and Art Department of the Committee of Council on Education. The expenditure of this Department in administration, grants in aid to schools, and expenses of circulation, was 109,775*l.* for 1869-70, and will rise to 123,902*l.* in the current year. The number of persons receiving direct instruction in the Science and Art schools (exclusive of the other educational establishments before cited) for 1869 was 178,698*l.* The national cost, therefore, of this portion of secondary education, of which between a fourteenth and a fifteenth part of the youth adequate to receive it have availed themselves, has been at the rate of about 12*s.* 4d. per head. As an economical application of funds, there is nothing to be said against these figures. The question of efficiency is distinct. That of numbers may be called appalling.

With reference to superior education, the institutions supported by the votes contemplate rather the prolonged pursuit of some special branch of study, than the general culture of the student,—a point which is not, so far as we are aware, attempted in any of our civil establishments.

The Royal College of Science, Dublin, received, in the year 1869, thirty-two students. Its cost was 6,800*l.*, being at the rate of 212*l.* per student.

The cost of the Royal School of Mines, the Royal College of Chemistry, and the Metallurgical Laboratory, in Jermyn-street, for the same year, has been 10,692*l.* The total number of students, regular and occasional, in these institutions, has been 281, at the rate of 38*l.* per head.

The cost of the Royal School of Naval Architecture for the past year was 2,175*l.* The number of students, forty; the rate, 54*l.* per head. The partial education, therefore, of 353 students, at a cost of 19,667*l.*, is the amount of our public education of a high technical order, offered to such of our 2,700,000 youth as it may accommodate. The youth of Ireland, indeed, are not included in the returns.

Thus the United Kingdom, out of an annual public income of some seventy millions sterling, contributes less than a million towards the primary instruction of the seven millions of British children. It contributes 120,000*l.* towards certain branches of secondary education, which, in more highly-cultured countries, are made obligatory on all young persons, but of which, with us, (exclusive of private tuition) 180,000 out of 2,700,000 avail themselves; and it contributes 20,000*l.* towards a fractional superior education, which is shared by 353 students. To the support of learned bodies, London, Scotch, and Irish universities and colleges, it contributes 50,000*l.* per annum. Museums and galleries receive the subsidy, not excessive *per se*, but disproportionably large in comparison with the more directly educational expenditure, of some 180,000*l.*; and this, together with 380,000*l.* for the primary education of Ireland, makes up the annual outlay, provided by the State, for educational purposes. For the rest, we have to trust to the operation of the law of supply and demand, to the much vaunted efficiency of the voluntary system, and to the working of those varied institutions, originating in the piety of the past or the speculative energy of the present, as to most of which, it is so foreign to our national habits to require or to possess any definite or synoptic information.

AMONG THE LINCOLNSHIRE CHURCHES.*

NEARLY every one is familiar with the general outline and design of the noble tower and octagon lantern of Boston Church, to which an interest of another kind has been added, also, by its connexion with Jean Ingelow's best poem, "High Tide on the Coast of Lincolnshire," where we are told how the Boston bells rang out the tune of "The Brides of Enderby," to warn the country folk of the advance of the "stolen tide;" but the statement that—

"The old mayor climbed the belfry tower"

(340 steps, to wit) must surely be taken with limitation, unless he were an exceptionally active old gentleman. Of the grand, almost cathedral-sized church, one need only observe that it is well preserved and rich in detail, of a late date externally, and that the effect of the interior is somewhat marred by a wooden vault to the nave. The western tower, separated from the nave by a remarkably lofty arch, and open nearly to the top, with its ties of lofty windows, is as fine internally as externally. A remarkably elegant specimen of metal-work in the shape of a communion-rail of *Classic* design, should not be overlooked by the visitor to this church. Proceeding by rail to Sutton *viâ* Spalding, we must pass rapidly over the salient points of the fine range of churches between the two last-named places. Sutton has a fine simple timber broach spire, which has been imitated more than once, if we mistake not, by modern church-builders, the nave piers and triforium, of late Norman, or rather transitional work, are of interest, and afford one among other instances of the round arch being retained, for constructional purposes, in smaller churches some time after its disuse in the larger arcades of the cathedrals. Gedney is remarkable mainly for its grand tower, chiefly of lancet date (the upper stage only being rectilinear), and affording another instance of the fine and expressive effect produced in the early Gothic towers by the mere play of surface and outline obtained by buttresses, stair turrets, &c.; all the rich decoration of some of the later towers will scarcely enable them to compete with these truly masonic designs. The nave is very late, and shows the thin walls (in this case not projecting beyond the line of the piers) characteristic of late work; the roof is a fine one, and a good instance of the variety of effect often produced in roofs of this date by the alteration of roof-principals of two different designs; and there is some very good flowing tracery (curvilinear) of rather exceptional design in the north aisle windows. Fleet, again, is chiefly remarkable for its tower and spire, standing apart from the church, and known to many from the engraving in Brandon's "Parish Churches;" in the church are eight carved heads, corbels at the springing of the roof timbers, of remarkable spirit and variety of design, and (so far as we know), hitherto unpublished. The well-known church at Holbeach, some of the windows especially of which have been so often figured as fine specimens of curvilinear tracery, is now undergoing an internal restoration, as far as the nave is concerned, under the direction of Mr. Christian; the much-worn masonry of the fine nave arcade piers having been cleaned and renewed where necessary, and a new timber roof of corresponding style placed over it. The chancel and the south porch are among the best portions of this church; and the unusual form of west doorway, with groined soffit, and gable cutting into the window above (the window also being of exceptional design), is worth notice, though very late work. A warning to church restorers is stereotyped in the north doorway, where the arch mouldings, originally very good, have been gone over and smoothed down by some careless hand in such a manner as to remove the fillets from the face of rolls, leaving as a residuum a sort of nondescript moulding. This achievement, we believe, is long previous to the present restoration.

From Holbeach to Whaplode: we can concentrate all our attention on the churches this journey, for truly the country itself is uninteresting enough; but Whaplode is a reward for a dull drive. What could be done with the Norman style in a small church is shown here by the eastern part of the nave, with its chancel-arch decorated with zig-zag and pellet and horseshoe ornaments, and its piers and caps each differing in section and in design, some of the caps showing the *hollow* cone ornament, which is believed to have had its origin in Wales, though met with occasionally elsewhere. Some of the piers here are actually thicker than the wall above them (which is of the same date), the caps projecting far beyond the archivolt springing. The western part of the nave is of transitional date, the caps of the piers just blossoming into stiff, but highly effective, foliated ornament. Taken altogether, this nave is an epitome of the progress from the complete Norman towards the realisation of Gothic feeling, even the older portions being in such sharp preservation of line and surface as would almost seem at first sight to discredit their undoubted antiquity. A fine tower of transitional date adds a further interest to one of the most complete and interesting relics of the period when our peculiarly national architecture was beginning to struggle into form and life. Moulton Church, mostly transitional in style, takes us a step further in this respect, especially as regards pier sections and carved capitals; and in the late transitional church of Weston, further on, we find the same progress continued, the three churches having very probably been built successively in the spirit of rivalry so prevalent among the Mediæval builders, and affording a remarkable opportunity for the study of the development of that beautiful feature in architecture, the Gothic capital. The chancel arch and capital at Weston are among the most beautiful, in moulding and design, that could well be met with on so small a scale; and amid work of later date, the rectilinear tower and spire at Moulton should not be overlooked. We conclude our survey with the large and only church in the apparently active and wideawake town of Spalding. This church is remarkable in plan, having four aisles, or rather four and a half in the nave, and a side aisle to each of the transepts; remarkable also for the almost total absence of carved ornament of any kind in an edifice so large and of such "good" date (latter half of thirteenth century). The mouldings, too, are of the simplest, and rather tame in character, though, owing to the solidity of the masonry,

* See pp. 678, 699, *ante*.

and the remarkable perspective effects given by the plan, the general internal aspect of the building is very fine. The centre aisle of the nave was formerly the same height as the transepts; but, at a subsequent period, the nave piers were raised 6 ft., the arches being taken down and rebuilt at the new level. The roof is a fine piece of late timber-work, with carved angels with outspread wings on the hammer-beams, and a deep moulded and carved cornice. For the benefit of our musical readers (of whom we hope there are many), it may be mentioned that Spalding Church contains a very fine organ, of three "manuals," recently added to and retouched by Hill; and at Whaplode there is a little organ of some interest, not only on account of intrinsic good quality, but as being, in great measure, the work of the amateur hands of (if we understood rightly) a former incumbent. Most of the other churches mentioned contain only what our Scottish neighbours might rightly term "kists o' whistles."

Of course, such a near vicinity suggests a flying visit to Peterborough, only nominally beyond our Lincolnshire limits. Has the celebrated west front been possibly a little over-praised by those critics who have called it "the finest in Europe"? The conception is a remarkable one, no doubt; it may be owing partly to the blackened state of the stone that the great arcade scarcely shows its real size (losing its light and shadow tints), and seems less grand in reality than it appears in some illustrations; and the section of the jamb mouldings, a series of circular shafts of nearly equal size, placed at an angle of 45° with the wall plane, is not the most effective either for shadow or for giving scale to the design. We are not questioning the title of the façade to high admiration, but only to the supremacy among façades claimed for it by some critics. This front again illustrates the influence of rivalry in stimulating architectural achievement, the present design having been clearly added as an afterthought in front of the originally proposed termination, in order to "cut out" the transitional west front of Ely, then just completed; just as the present Lady Chapel, with its late and completely developed fan-groining, was substituted for the earlier one adjoining the north transept, in order to outdo the Ely Lady Chapel built just before, and in which the fan-groining has not quite reached its final development. The general design of the grand Norman arcades of the interior is familiar to every one; as at Lincoln, the vaulting-shafts (or rather roof-shafts) in the choir have been cut away and stopped to make room for the stall-canopies, perhaps in the fifteenth century; the "stopping" being effected by cutting away the heavy Norman shaft nearly to a point against the wall, and finishing each with a small delicately carved head; the effect of these little faces, scarcely more than 2 in. across, thus introduced into the midst of the massive comparatively uncouth Norman work, is most curious and piquant. The present stalls, by Blore (some thirty or forty years since), are admirable specimens of "restoration" work of that period; and the recent colouring on the ceiling and on portions of the walls of the choir, executed (we believe) under the direction of Mr. Gilbert Scott, is very harmonious and pleasing in effect, excepting the figures of Christ and the Apostles on the ceiling over the altar, which are in that archaic style against the revival of which we have again and again protested, and which has not the slightest necessary connexion either with modern church art or modern Christian worship. The colouring on the walls, be it said, is confined to flat surfaces; mouldings are not touched by it, and it is to be hoped will not be. The ruined hospital and chapel to the south-east of the cathedral should be inspected, as the remains of fine Geometrical work, and instancing the application of three-aisled buildings to other than strictly ecclesiastical purposes. We cannot however, on this occasion, linger longer over Peterborough, and will quit it with a word of appreciation for the careful and satisfactory singing of the choir: much better, certainly, than that at Lincoln.

What lesson is suggested to the architect by such a rapid review as we have been making of a number of churches of different periods of Gothic art? A good many, probably; but this one in particular—the only one on which we will here insist,—that of designing in strict relation to the properties of your material. We should be inclined to call this one of the most remarkable characteristics of early Gothic art. Taking one feature, the capital; we find, in the Norman period, and up to the climax of the style, in the Geometrical period, ornament which precisely demands stone for its effect, and which could have been so easily and so effectively worked in no other material. So with larger features; the early lancet towers, for instance, which are emphatically masonic designs. It is only in later Gothic that we find panelling in stone, buttresses cut in wood, features used in contradiction to the material in which they are executed. Is not this relation between design and material the secret of the remarkable preservation in which older work is often found, in comparison with later? In our modern Gothic churches we often find most beautiful and delicate naturalistic carving, in comparatively soft stone, but of a type which would be better suited to wood-carving, and which has certainly little chance of lasting, in Bath or Caen stone, to be studied by the architects of five or six centuries hence. The early Gothic architects considered that in stone they had a granulated material, most effectively and most durably worked in large rounded projections and hollows, leaving plenty of breadth of surface. Their design almost grew out of the nature of their material. To the modern designer, whether he work in stone, wood, or iron, we say, "Go thou and do likewise."

Those who accompanied the excursion we have been making notes of, will feel that such notes would be incomplete without a word in recognition of the time and trouble so liberally given by the distinguished archæologist and ex-architect who suggested and organised it. Those who have gained a life-long experience in any branch of study, can hardly be more worthily employed than in giving to the younger generation some of the results of their acquired knowledge; and the valuable assistance and information given on this occasion to a number of the junior members of the architectural profession, calls for more than the merely private tribute of respect and regard which, we believe, Mr. Sharpe has already received from those who enjoyed the pleasure and profit of visiting the Lincolnshire churches in his company.

NEW PUBLIC BUILDINGS IN BARNSLEY.

ALTHOUGH the building trade in Barnsley cannot be said to be so active as it was a few years ago, there is, nevertheless, a fair quantity of work for the builder. Several large public buildings are either being erected or renovated. The introduction of the Midland system into Barnsley has not only given to the public a far superior station and a new county court, but the promise of a commodious and healthy station, in place of the present filthy structure which is owned by the prosperous Lancashire and Yorkshire Railway Company. The present county court, which has only been erected for a few years, being required for the purposes of the railway company, a new erection is going on at the top of Regent-street. The building is of a very substantial appearance, and when fitted up will combine all the requisites usually looked for in an erection of its kind. Mr. Sorby is the architect; the contractors being Messrs. Nicholson & Son, of Leeds.

The Beckett Dispensary, which was erected a few years ago through the munificence of the late Mr. J. S. Beckett, of Torquay, is being considerably improved. Another building of about the same area as the first erection is being built by Messrs. Nicholson & Son, at a cost of something like 4,000*l*. The structure, which is of brick with stone facings, will supply a long-felt want to the town and district in the provision of infirmary accommodation, which, to a mining and manufacturing community, is one of the most essential boons which can be placed at their disposal in case of accidents, which are of daily occurrence. The architect is Mr. Woodhouse, of Bolton, and the work, which is progressing satisfactorily, is being carried out under the superintendence of Mr. Amos Taylor, of the firm of Messrs. Taylor & Son, architects and surveyors, Barnsley.

The renovation of St. Mary's Church, which is fast progressing towards completion, has occupied the attention of the contractors and architect for some time. The structure (with the exception of the tower) owes its construction to the years 1820 and 1821. The interior, which is being renovated, measures 102 ft. by 61 ft., and was built at a cost of 12,000*l*. The whole of the galleries have been removed, together with the old square pews, and in their stead open stalls are to be constructed. The interior generally has been renovated, and a vestry or recess, which was approached from an outer door, thrown into the church. A stained-glass window is to be placed in memory of the late Mr. J. S. Beckett, whose munificence has been before noticed. A stained-glass window is also being placed in the tower, which was built in the early part of the fifteenth century. The work has been placed in the hands of Mr. Bodley, of London. Messrs. Robinson & Son, builders, are the contractors for the mason work. Mention may also be made of several buildings, which, although not in the course of erection, must shortly follow in the train of public improvements. A commodious town-hall is greatly needed by the corporation, which has recently claimed and become enrolled amongst the boroughs of Yorkshire. The whole of the business of the borough is transacted in the court-house, which was constructed in the year 1833, by subscription and out of the rates.

Public baths and washhouses are about to be erected by the town, a site having been promised by a gentleman largely interested in the welfare of the borough. As before intimated, a new railway station is also arranged to be built by the Lancashire and Yorkshire Railway Company.

The erection of cottage property, although not so large as it was a short time ago, is still progressing, and a good many buildings have been put up during the present summer.

Several pieces of land have been laid out as building plots, and it is believed that the Shaw Lands, which were left for certain charitable purposes, about forty-two acres in extent, will be laid out, so that, should trade flourish and commerce deal out her customary blessings, the building trade of Barnsley will be at least moderately active for some time to come.

AMERICAN SHIPPING: NEMESIS.

FROM the time of and since the war, the Americans have gone in strongly for "protection," particularly in so far as the iron producers and manufacturers of iron are concerned. They have imposed duties almost prohibitory upon all kinds of iron and iron manufactures, from pig-iron to penknives, from scrap to steel springs, and the range has, of course, included the kinds of iron bolts and parts of machinery required in the construction of ships. The pressure brought to bear upon Congress recently has induced a relaxation of the tariff. The import duty upon wrought scrap iron has been reduced from 8 dollars to 5 dollars per ton; on cast scrap iron from 8 dollars to 6 dollars; and on pig-iron from 9 dollars to 5 dollars. To effect these reductions the free traders had to undergo a severe encounter with the protectionists, who insisted upon higher rates. The figures determined upon are a compromise. The sorts we have named do not materially affect the materials required in ship-building, and a renewed and continued fight may be expected between the shipping interest with others doubtless, and Congress, with a view to a relaxation of the tariff, and much need there is for such a change. Before the duties just referred to were reduced the dues stood thus: — Pig iron, 1*l*. 17s. 2d. per ton; refuse scrap, 1*l*. 13s. 2d.; Russia admitting pig, bars, and scrap, at 10s., and half a dozen other European countries admitting pig iron free. For parts of machinery, the United States impose an import duty of 9*l*. 15s. per ton, or four times the rate of some European countries. On some of the finer manufactures of iron and steel the import duties are almost fabulously high. Needles for sewing-machines, for instance, are charged 4s. 2d. per thousand, and, in addition, 35 per cent. *ad valorem*. Penknives and other knives, 50 per cent. *ad valorem*. Steel pens, 5d. per gross, the full value at the works, and 25 per cent. *ad valorem*. Files, rasps, and floats are charged with an import duty of 45*l*. 16s. 8d. and 27*l*. 13s. 4d. per ton, as they may be under or over 10 in. in length, and, in addition, 30 per cent. *ad valorem*. Screws are charged 50*l*. 13s. 4d. and 37*l*. per ton, and, in addition, 35 per cent. *ad valorem*. There is no tariff in existence, that we know of, as severe as that of the United States with regard to the metals and metal manufactures produced by the United Kingdom. It may be mentioned here that we take twenty millions sterling more of their productions than they do of ours, the figures being, as near as may be, imports from the United States 45,000,000*l*., exports to the United States 25,000,000*l*.

The protection shoe pinches; the effect of the screw put upon the shipping interest during the war, and of the severe tariff, has been to extinguish, as nearly as possible, the American mercantile marine and the American ship-building interests. The laws of the Union forbid would-be ship-owners from buying foreign-built ships, and registering them under the United States' authority; and the tariff prevents them from building new vessels. The days of timber-built vessels, they probably think, are over; and the customs charges upon the materials used in building iron ships render it utterly impossible for them to compete with European builders: hence it is that the stars and stripes, once so common on ships in the Thames and the Mersey are now rarely to be seen. The American would-be ship-owners are exasperated by the circumstance that their laws shut them out completely from participation at the present time in the ocean-carrying trade of the world, the greater part of which will fall to the ship-owners of the United Kingdom, who have amongst them a larger mercantile navy than all the rest of the world put together.

The ship-building yards of Boston (where there are about thirty), New York, New Jersey, and Newbury Port, are all silent and deserted. The yards on the Thames are not as busy as is desirable; but they are not all quite silent. On the Wear, the Tyne, the Clyde, and even on the Tay, there is the healthy clangour of ship-building industry. The remedy for the depression demanded by the Americans is that Congress should pass an Act to admit all articles required in the construction or repair of ships, and ships' stores, duty free. The shipbuilding art seems to have been destroyed, not by the protection given to *it*, but to the Pennsylvanian ironmasters. A shipbuilder writes in the *New York Times*:—"For seven years there is not a ship-carpenter that has had work enough to teach a young man the business; and it is now a fact that it is almost an impossibility to get any first-class ship-carpenters to build ships. Those that are in the navy yards are so slow that they are of but little use to outside builders. I am confident that we cannot build up our mercantile marine with any aid we can get from Congress." The editor of the *New York Times* laments that for the first time in a generation an opportunity is offered to the American people of recovering an immense business once enjoyed by them—the carrying trade with Europe. He deplores the fact that the American mercantile marine is disappearing from the ocean, and that instead of their adding 500,000 tons a year to their shipping, as they did from 1827 to 1857, they are not building 50,000 tons a year. The Americans consider that the European complications have laid the carrying trade of the world at their feet, but they cannot take it up,—have given them a splendid chance that they cannot grasp.

They have no misgiving as to their ability to compete with English ship-builders, provided they had free imports. They would beat the English builders, they believe, in "the more ingenious use of labour-saving machinery," and otherwise; but confessedly, as matters stand now, they have no chance of existence in ship-building. An attempt was made recently at Chicago to build an iron vessel for the grain trade of the upper lakes. The import duties on the materials were found to range from 38 to 66 per cent., and the project was abandoned. There is not now a single American ocean steamer on the seas, among the 130, or more, that ply to and from United States ports. It may be hoped that those interested in the American ship-building and shipping trades may cherish a fellow feeling which may make them wondrous kind to others who are oppressed by the heavy burdens imposed upon the American people, and those who are willing to serve them, by their Old World and unwise tariff, and that the result may be its modification in the direction of a free exchange of productions.

The Manchester Surveyor's Salary.—At a recent meeting of the General Purposes Committee of the Manchester City Council, the town clerk read a report from the sub-audit committee, in which the question of the proposed increase of the salary of the city surveyor (Mr. Lynde) was referred to. The committee unanimously recommended that the salary of the city surveyor should be increased to 1,250*l.* per annum. The recommendation of the audit sub-committee was adopted, subject to the approval of the council.

ARCHÆOLOGY IN HEREFORD.

THE British Archæological Association are holding their Congress in the ancient city of Hereford. It was opened on Monday, under the presidency of Mr. Chandos Wren-Hoskyns, M.P. The Mayor and Corporation attended in state, and the Town Clerk having read a very complimentary address—

The Mayor of Hereford, in the name of the citizens, gave a very cordial greeting to the members of the Association.

The President then delivered his inaugural address, which was so interesting that we are led to print a considerable portion of it. After expressing a hope that every hour of their presence would be productive of gratification, as fully as it was appreciated by those honoured by it, he said that had he been led to think that in the part assigned to him there was involved any emprise beyond the homely and hearty expression of a Herefordshire welcome, nothing could have induced him to enter upon the duty of the hour. But the mission of the illustrious society, whose twenty-seventh anniversary was held there, was to teach, not to listen,—to point out to them with all the aids and advantages of widely-gathered antiquarian skill and experience the precious and too often overlooked or forgotten history of many local monuments of the past, such as their own district so richly furnished. He had, however, now to learn that true knowledge is ever gentle and forbearing,—that it knows well how to sympathise with the most imperfect efforts—nay, to condone even with ignorance itself which desires to learn. Such was the feeling under which he ventured to weave into the offering of their welcome, a few thoughts and questionings that occurred to him and to others in reference to the archæological features of the district, which formed the scene of their session of 1870. Having spoken of the term "our ancient city" as indicative rather of affection than actual chronology, he said, we are all archæologists at heart, and like to feel that we belong to the past, that our roots lie deep like those of the native oaks of our county, that there are old weather-beaten links that connect us with the almost forgotten days of an ancestral world, whose dead, but not memory, had passed away. It would seem like a waste of time were he to attempt a panegyric upon a branch of knowledge now so popular and so justly valued as that of archæology. Long before archæology had begun to be studied as a science it was the remark of one who professed himself a disciple (Sir Thomas Browne) that "Time conferreth a dignity upon the most trifling thing that resisteth his power." Such were the words of one who, in the seventeenth century, spoke only with the feelings of an antiquary. What would have been the expression of his feelings now? We had only to look at the language of every historian who had written within the last twenty years to witness the relation into which archæology had now entered as the acknowledged handmaid of history. So remarkable had been this progress, that it could hardly fail to have awakened in many minds a reflection that had taken something of the form of paradox—that the older the world grew the more it should seem to care, the more curious it became, and in truth the more it learned about its origin, ethnological, linguistic, and historical. In the ordinary course of experience, and even of thought, it might seem quite natural that a science which essentially bears reference to the past should belong to the class of subjects to which time brings diminishing interest, and should suffer from the presence of the busy world around us. So far is this from the fact, that every work that issues from the press in history, or language, or philology,—on race, on geographical discovery, and the physical history of the globe, even on general literature,—contradicts emphatically such a conclusion. It almost seems, on the contrary, as if it had been reserved for this latter age to open out a new and extended horizon, derived as from a new world of old matter. What was less than a generation ago looked upon as a topic of rare, almost eccentric curiosity to a small knot of inquirers, has, by gradual but well-marked steps, dilated into a broad front of eager and extending research, and that, too, not in one, but in many directions, the joint effect of which is in some respects to throw a fresh significance upon every branch of history, and claim for archæology a position amongst the most valued studies of the world's advanced age. Some there are, it is true, and still possibly no inconsiderable class amongst us who regard the pursuit of it as "unpractical." But he ventured to think that a little comparison would show that this was not only erroneous, but opposed to some of the best practical evidences that can possibly exist of the relative value and position of human studies. In politics, in ethics, in metaphysics, in poetry, viewed abstractedly as studies,—in painting and sculpture, in geometry, architecture, and in decorative skill, viewed as arts, the vertebral principles, so to speak, have been before the world, unaugmented by any established addition or discovery, for the last two or three thousand years. For the four first that he had mentioned, the names of Appelles, Phidias, Archimedes, and the artists of Nineveh, Thebes, Athens, and Pompeii, stand to this day unrivalled, almost unapproached. These subjects have been, in a certain sense, argued out; nothing really new (with one great exception) has been said about them for ages past, nor seems likely for ages to come. He was not aware that a single new principle of government had been evolved out of the human mind since Aristotle wrote the Politeria, or Plato his Republic, and each of the others stands in the same category. Upon these great subjects, though on many of them men remain as divided as ever into opposite views, it is not so much that we shut our eyes to new truths as that there are no new truths to tell.

Not so is it with archæology; the study which but the other day was regarded as the harmless pursuit of the curious and eccentric—gropers among the dry bones of the past,—has now awakened into such life and meaning, as to startle even the most incredulous with facts that present an organised shape no more possible to pass by or overlook than would be one of those extinct giant creatures of our globe, were it suddenly to arise before us at the recreating touch of a Cuvier or an Owen from one or two fossil bones of its stupendous form. Indeed, it is in exact analogy with such a recreative power as this that archæology develops its most useful results. It restores to the mere skeleton of history or tradition the flesh and lineaments—the very bearing and expression—which each age wore as it passed by. We see the illustrious figures of the past moving over the stage of life, as Macbeth saw in spectral procession the future of Scotland's monarchy, even down to that one who showed a double crown, by which with transcendant art our great poet brought down the story of his immortal drama to the time and into the very hearts of his audience. The history of our race, which even up to our own day was content, indeed compelled, to walk alone by the light of tradition, or of documentary evidence not always more reliable or authentic, is now comparised by an active colleague who takes nothing for granted, owes little to theory or hypothesis, but points to earthly vestiges, substantive records, visible and tangible existences, that have awakened a new century of thought, and seem to enlarge not only the scope but the very scale of our contemplation. As an illustration of his words: less than a generation back, if an antiquary had been questioned where the most ancient monuments or vestiges of our race were to be found, he would at once have pointed to Egypt or to the East. Very different would be his answer now. Without going out of Europe, without even crossing that narrow channel which so graciously divides us from its complications,—on banks, once the extended beds of familiar English rivers; beneath the soil of many a modern village,—indubitable traces are to be found of human life and habitation, reaching up to a period so remote that in comparison with those primeval denizens of our island the shepherd kings of Egypt, or the almost fabulous dynasties of India and China, would seem but men of yesterday.

> "Antiquity appears to have begun
> Long after their primeval race was run."

It might almost raise a smile to see the antiquary of the last generation paying reverence to a coin or fragment of pottery, for its extreme antiquity, reaching to some three or four thousand years, while beneath his very feet reposed the long-forgotten implements and weapons of men who saw the hippopotamus floundering and basking in the mud of the Severn or the Thames, or tracked the stately mammoth to his lair in the neighbouring Forest of Dean, or transfixed the giant reindeer, with bone-headed arrows, and scooped out its marrow with flint knives. Such

are the thoughts which unavoidably suggest themselves to the contemplation of archæology and the sciences in close alliance with it.

Proceeding in the spirit of inquiry to ask the solution of some of the difficulties the archæologist would meet with in Herefordshire, he ventured to assume the existence in other minds of a sense as enthusiastic as that which had dwelt from childhood in his own, in looking upon this county as the very heart and centre of the border land that has separated in turn some of the most varying and remarkable races by which our island has been from time to time occupied. From the earliest dawn of traditionary history, this has been the disputed territory, the battle-ground of opposing tribes and races,—may we not almost look upon it as a sort of epitome in itself of the changeful dynasties and fortunes of the whole soil of England? By the Roman and the Silurian, by the Mercian and the Briton, by the Dane, the Saxon, the early Norman settler before the Conquest, and the Welshman, our fields have been fought over acre by acre, and inch by inch. War has been here in all those forms of grandeur and of misery of which we have lately heard, and are still impressed by such painful and such solemn evidence. Century after century it has swept like an ebbing and flowing tide, backwards and forwards on the Severn on one side, to the frowning barrier of the Hatterel hills on the other, sometimes perhaps ennobled by deeds of high daring and chivalrous generosity—more often marked by the dark and fierce passions that made the very name of border warfare and the inroads of the marches a synonym and excuse for every form of rapine and cruelty; its combatants on either side realising in the worst degree the Roman general's contemptuous phrase "Cauponantes bellum non belligerantes."

Certainly the most interesting and intelligible, as well as the most early recorded of these conflicts is that long twenty years' struggle of our Silurian ancestors single-handed against the power of Imperial Rome, which found on the red plains of Herefordshire an opponent not unworthy of its arms. I need not recall to you who listen to me here that in the neighbourhood of the very spot on which we are now assembled there once existed one of the bravest and fiercest races that ever defied the practised arms of the world's conquerors. Far and near around this spot the very ground we daily tread on witnessed their dauntless and never-despairing resistance to the Roman invader. Even at this distance of eighteen centuries it is difficult not to feel a glow of pride at the description given by a hostile historian of a race dwelling here whom no strength or strategy could divert from their patriotic courage, who kept the veteran troops of Rome's best legions in a state of constant vigilance and alarm, even within their entrenched camps. For such we know were throughout the Claudian war strategically arranged by Ostorius along the course of the Severn and the Avon. Yet for nine years we find this brave people under their great leader and king, Caradoc, defying the Roman arms and struggling to break through the chain of military camps established to repress them. It is doubly interesting to gather from the eloquent facts themselves that had no historian on the British side,—from the gallant and long-protracted struggle,—from the extensive operations to which the Romans were driven,—our assurance of the genius and courage of that noble British chief

> "Descended from a sceptred race,
> Who ruled Britannia's independent isle,
> Beyond all annals of recording fame."

The interest of this struggle deepens after his final defeat and capture, and the well-known scene in Rome; when we find them unsubdued by their loss, revenging themselves by bloody onslaughts upon their invaders, and Ostorius himself, in spite of his victories, dying of vexation more than fatigue; and his death followed by a defeat so ignominious that the province still threatened to be torn away from Roman power. And when was noble tribute ever wrung from the pen of an enemy that conveyed in the words of Tacitus, in describing the close of that twenty years' warfare, where he tells us that Julius Frontinus had the glory of subduing this powerful and warlike Silurian nation, in accomplishing which he had to compete with an indomitable foe, and with local strategy which had equally defied the utmost efforts of all his predecessors.

If such was the tale as told by the pen of the Roman annalist, what would not the record have been if King Caradoc had but had his *vate sacro*,—if a few telegrams from our own special correspondent could but reach across the gulf of those eighteen centuries?

But let me put the question I have so often longed to ask,—for when can I better ask its solution than now—Who were the Silures? Whence came the black eyes and hair, the small heads and features, the lithe forms and swart complexions that are described as the physical characteristics of the race located in this district, apparently in such contrast with the large-limbed and fair race whom Cæsar found on his first landing in Eastern Britain, and which have been accepted as the ordinary British type? Were they a Keltic race? and, if so, to which of the Keltic migrations did they belong? or is that theory true which assigns them (with Tacitus) to the Iberian rather than the Keltic stock, and connects them with the population of the Basque provinces of the Pyrenean districts, whom they so much resembled. Or are both these theories consistent with each other, and did the Silures form part of that third Keltic migration that came from the south by sea, and has been called from the country where the migrants longest remained and exercised most influence, the Hispano-Gaelic migration? We are told that there is heard to this day in a few hamlets on the Pyrenees a tongue entirely dissimilar from any that falls on European ears—an isolated surviving vestige of some ancient tribe whose history and migration have been long buried in the mystery of Time: yet these few traditionary sounds are of deep interest to the student of those early migrations through which the west of Europe was peopled by intrusive races who first conquered and then united with the native populations. May we venture to suppose that it was from that migration, bringing with it so much that we associate with the Iberian or Spanish stock that the Silurian type was derived?

And if this supposition be admissible, may it be to an old student of agriculture allowable to connect with it collaterally a peculiarity found in this county in the existence of a certain ancient four-footed race bearing striking points of resemblance with the sheep of Spain,—the Spanish merinos? I allude to the little Ryland sheep, whose silken fleeces once formed the unrivalled staple of the commerce of Leominster, when that town was one of the principal markets, indeed the chief emporium of this part of the kingdom.

In concluding an exceedingly interesting and very eloquent address, Mr. Wren-Hoskyns said: The truth is, we are so full of written histories that we are apt to forget what Mr. Newton, our Herefordshire Layard, so eloquently says,—"The record of the human past is not all contained in printed books." Man's history is graven on the rocks of Egypt, stamped on the bricks of Assyria, enshrined in the marble of the Panthenon. It rises before us in the piled-up arches of the Coliseum; it lurks in unsuspected treasure amid the oblivious dust of archives and monasteries; it is embodied in the heir-looms of familiar races, in the relics which affection and gratitude, pride of country or lineage, have preserved; it lingers like an echo on the lips of the peasantry, surviving in their songs and traditions, renewed in their customs with the renewal of nature's seasons. We trace it in the speech, the manners of nations; we dig it out from the barrows and the necropolis; and out of the fragments thus found we reconstruct in museums of antiquities something like an image of the past.

The footprints of those who have gone before us are not the mere subject of literary interest or curious inquiry; they find an instructive response in our hearts which rejects the mere parrot-tale of the showman or cicerone. We are sensible of an occult relation sacred to each individually with all that has gone before us,—with all that will come after: we stand upon a mere point of Time, with an Eternity on either side. It is our especial privilege alone of all created things,—often our penalty,—to look before,—and after:—to remember, and to hope. The vestiges that have been left to us from the past are the links that tie each generation with immense antiquity behind it. Spanning the abyss of time by monumental records, often as unconsciously transmitted as the footprints of those extinct races that pressed lightly upon the soft sand, they reappear to our eyes through the lapse of ages in fossil shapes of almost imperishable durability,—apt emblem of our own poor fragile frames, yet far-reaching thought and destiny.

On the motion of the mayor, thanks were voted to Mr. Hoskyns by acclamation, and after a brief address by Mr. Godwin, warm thanks were also given to the corporation. At the dinner in the evening, the president was in the chair, and several interesting speeches were made.

On Tuesday morning, after service, Mr. Gordon Hills conducted a large party round the cathedral, and delivered a discourse on its history, in which light was thrown on several disputed points: afterwards, the Rev. C. Boutell ably described the monuments. To both these addresses we shall return. In addition to the gentlemen already named, the Rev. Dr. Jebb, Prebendary Scarth, Mr. Thomas Wright, M.A.; Mr. Edward Roberts, F.S.A.; Mr. Blashill, Mr. W. P. King, Mr. J. F. Symonds, Mr. Henry Godwin, F.S.A. (of Newbury); Mr. W. H. Black, F.S.A.; Mr. Holt, F.S.A.; Mr. T. Curley, C.E.; The Rev. F. T. Havergal, Mr. J. Severn Walker, Mr. G. C. Haddon, Mr. Dillon Croker, the Bishop, and others, are taking active part in the proceedings.

COLOURS AND DYES IN EARLY TIMES.

THE subject of colour, now so much discussed in connexion with architecture and sculpture, is interesting in more respects than one. Colour has also a sanitary aspect. The houses we live in, the food we eat, the fluids we drink, and the clothing we wear, display it. Our very tastes, bodily and mentally, are influenced by colour. To its influence and production, in a domestic and sanitary point of view, we will first look. There is hardly anything in nature or art colourless, and a certain colour, to certain minds, produces a feeling of pleasure and comfort, or otherwise. Independently of the fine arts, and of Nature's landscape, we are governed by colour. The female dress or head-gear, or the man's coat or vest, is as often chosen for its dye as for its texture; but not one out of the ten thousand who are more or less influenced, or who even talk glibly about colour, gives one moment's thought to how these beautiful dyes in articles of their daily clothing are produced. The history of the art, in its relation to civilisation and sanitary progress, possesses much interest and deserves attention.

The early inhabitants of the British Islands understood, not only the art of making several kinds of linen and woollen cloth, but were acquainted with native modes of dyeing them. We are told by Strabo and Dion of the principal colours worn by the ancient Britons, which appear to have been yellow, red, and black; and Giraldus Cambrensis, writing in the twelfth century, tells us that the Irish wore frequently black, which he avers was principally made from the wool of their black sheep. The history, romances, and poetry of the Kelts furnish us with abundant proofs that it was saffron or yellow colour that predominated, and for which the greatest fondness was shown. Of the other colours, red and crimson are often mentioned. Robes of these colours have been often worn. Several Irish statutes, however, bear testimony of the propensity of the Kelts for yellow. Among the Gauls and ancient Britons the principal colours were black, crimson, purple, and yellow, and there were also several among the Kelts. While we learn a good deal from history about colour, the majority of our historians are altogether silent about its production, or of the materials used in its composition. In considerable travel through the British Isles, extending over many years, we have picked up from usages, recollection, and mouths of the people themselves, in distant localities, the information we have been unable to obtain elsewhere. Some years ago, on the coast of Wales, and on the south-west coast of Ireland, we found traces of the primitive modes of dyeing, and the methods used for producing the materials employed in the production of some very beautiful dyes and colours. Yellow was, in former times, and recently, a favourite colour with both sexes, but principally with the fair sex. In England, Ireland, and Wales, women dyed their chemises, veils, petticoats, and bodices, and the men their shirts, vest, and trousers. In Ireland, after the invasion of Henry II., Acts of Parliament were passed to prevent the English settlers from following the Irish custom of dyeing their garments yellow. The English statutes assert that the colour was saffron. We wonder if, by saffron, was meant the crocus, as we cannot find any evidence that the early Irish ever cultivated the crocus. Its introduction into gardens in that

country is of a recent date. It was hardly imported from abroad by the common folk, or even others, as its expense would preclude it from being commonly used. Saffron probably meant any yellow colour. The wold or weld, *Reseda luteola*, sometimes called dyer's weed, used so extensively in this country, was also used among the Irish, and was known to them by the name of *buidhmor*, or great yellow. We are aware that the Irish used the plant to dye their woollen and linen stuffs with different degrees of colour, and fixed it with urine. The colour thus obtained was not given to fade; it resisted damp or wet for a considerable period, and possessed another property, thought to be of advantage to the poorer classes—it required little or no washing.

If we are to credit Morysson, the Irish of the period he alludes to, were very sparing of their clothes, and were not addicted to wearing them out by washing, frequently not taking their shirts or chemises off until worn out. The truth of this must be qualified by suggesting that it must be the very lower orders who would thus wear out their under-clothing without cleansing. It is asserted that washing was not necessary in some instances, as these linen garments became so thick and close by the colour and fixing employed as to become nearly impervious to dirt or wet. This assertion must also be received with considerable allowances. The black colour which Cambrensis speaks of as being general, from the fact of the existence of black sheep being in the country, is not borne out on examination. All the sheep were not black, and we find that the black colours were of a deeper hue; and consequently, if black wool was even generally used, a deeper tint was employed. We find that such was the case. The lower orders, down to a few years ago, in remote districts, had their mantles, trousers, and cloaks of this colour; and the following was the method employed for producing the colour or dyes:—A bog-mire was procured; and this consisted, as all are aware, of decayed vegetable matter of an astringent quality. The colour was fixed by the same means as we have before mentioned, a means still used, more or less, throughout the three kingdoms. The colour produced by the bog-mire was of a jet or deep black. This was a most lasting colour when once properly fixed; the weather could not affect it, and it retained its brilliancy while a portion of the cloth remained. If coarse woollen cloths could be thus dyed by the humble and unlettered of such ineffaceable hue, it occurs to us that clothiers would be successful with fine linen stuffs also. Persons of rank in England formerly, and very generally in Ireland, had their garments, which were made of fine stuffs, dyed purple and crimson colour.

We find, in some of the ancient Ossianic and Keltic poems and romances, frequent mention of purple (red and blue) garments. Many of the Irish and Welsh peasantry by the seashore, in the last century, and early in the present, were engaged in collecting the mosses that grew upon the rocks and stone, for the making of purple dye. The Irish called it *corcair* and *arcell*, and by the Erse it was known as *corkir*. The fine bright crimson colour was obtained from the finer kind of *corcair* scraped from the rocks, which was afterwards dried in the sun, and reduced to powder; then infused in urine for nearly the period of a month. The *arcell*, or coarse kind of moss, produced the purple colour; it was also similarly treated, and made up into balls with lime. It produced a beautiful purple colour. Early in the present century large quantities of colours and dyes thus made were sold in the public market-place in Dingle. The very same description of moss in nature and property was largely imported to London from the Canaries and the Azores, under the name of Orchil. At the date we are speaking of, 10,000*l.* to 12,000*l.* annually were paid away for foreign moss, and this same *archil* or *arcell* could be procured in any quantities on the south-west coast of Ireland, and on other sea-beaches in Great Britain. The Irish produced also from this moss, orange and bright scarlet colour. This they accomplished by dyeing the stuff first yellow and afterwards crimson.

Dr. Nicholson, the antiquary, when Bishop of Derry, in 1725, intending to prepare a natural history of his diocese, wrote to his several clergy to make collections in their several parishes. A Rev. Robert Innes, rector of Magilligan, in the county of Derry, responded, and in 1732 the rector published in London seven letters, addressed to his lordship, of a very interesting kind. From one of these letters we glean a few more facts in corroboration of our own researches and experience. One extract will be interesting:—"The Irish have herbs for diet for physic, and almost all uses. They use a *pentaphyllum rubrum*, — in the Irish language, *crowlean*,—to thicken their milk suddenly, by rubbing their vessels with it; and, by the way, I cannot think it the same with Parkinson's or Ray's, for this carries no red flower, nor any flower but purple hairs, on a strawberry-like button, but whether I mistake them, my lord, I will not be particular. The tops of the yellow ladies' bedstraw they use for dyeing yellow, and the roots for a madder red. Crother, a sort of moss on stones, dyes a good gold colour. Corkry, another scurf on stone, dyes a peach colour; the roots of the white water-lily, a black. In a word, we can dye most colours with our native growth, but blue, or what depends upon it. The roots of tormentel (in Irish, *namnat*) hath been used by the Irish to tan leather."

It would appear from the above interesting record that the Irish in Dr. Nicholson's day,—or say, a century and a half ago,—had no native method, no plant indigenous to the soil, for producing blue. It might be true as far as Derry was in question, but it is not true of the whole country.

The plant well known in this country as woad was extensively grown in England for many years—it produced a permanent blue dye. This plant must have been known in the sister kingdom also, though not so soon. We cannot say we met with it much in its wild state anywhere except in the immediate districts where it was extensively cultivated, and in places where the seed was likely to be drifted by the wind. Blue, as a general colour, does not appear to be in much repute among the early inhabitants of the British Isles, although we read of the ancient Britons dyeing their bodies with a blue colour. In the present century in the three kingdoms, blue colour in articles of wearing apparel appears to be more sought after than formerly. Blue, for many things, is a more lasting colour than black; while lime and mortar will affect black cloth, and turn it yellowish, blue will resist its effect.* Indigo now is gradually superseding the use of woad. The latter we have known to be greatly adulterated, and which, though sold as woad, fully two-thirds of it was composed of a variety of wild and cultivated plants ground up altogether, dried and rolled up into balls for use. The public have been thus cheated out of their proper colour and dye, cheated in articles of clothing as well as eating and drinking, through believing they were purchasing stuff that would wash and hold their colours fast. A dress, of course, that does not hold its colour, though warranted by the seller to do so, is simply a robbery. The seller knows pretty well, from the price which he pays the manufacturer, whether the article is a fast colour or not, and if he sells it as a fast colour to the struggling tradesman or tradesman's wife as a fast colour when it is the reverse, he is obtaining money under false pretences, and he should, without any ceremony, be at once indicted. This is the sanitary aspect of the case, in the interest of the health and living of the poor.

We will adduce a few more particulars concerning the dyes and colours in use by the ancient British and Irish ladies. Dion and the venerable Bede inform us that they dyed their linen a beautiful crimson colour, which neither the heat of the sun nor the continuance of the rain could injure. The colour was produced from a small shellfish called *cochleæ*, and was named accordingly *coccine*. We are not told by any of our ancient writers the species of shellfish. We have sufficient knowledge to be certain that it included the periwinkle and a limpet of black, red, white, brown, yellow, and sand colours. The method of obtaining the colour or dye was pretty extensively practised at one time on the western coast of Wales, and on the eastern coasts of Ireland, principally Wexford and Wicklow. The fish was turned upon a stone or some other solid body, with its mouth underneath, and without injuring the fish the shell was carefully broken. The shell being picked off, a white vein presented itself, extending transversely in a hollow or furrow near the head. This might be lifted out by a pointed instrument. When the periwinkle was used the shell was not injured. In this instance the vein was seen lying on the head. This, being pricked with a needle, emitted a few drops of a milky while liquid. The process might be repeated for four or five days without injuring the fish. If letters or figures were drawn with the liquid obtained from either fish on linen, the characters first assumed a light green, then a deep green, next a full sea-green, afterwards blue, again a deep purple, red, a perfect set of chamelion-like variation, all in a few hours, while exposed to the sun. When the sun has done all it can do, domestic art steps in. By washing it in hot water and soap, the purple colour then becomes a beautiful crimson, which none other of the elements can change,—sun, rain, nor washing. The early Britons are said to have dyed much with this colour, but we doubt it. To dye thus on a large scale, would lead to the destruction of immense quantities of fish. With only six or seven drops to be obtained from each fish, the sacrifice of the little marine mollusca would be something awful to contemplate,—sufficient, we opine, to start into existence a new Society for the Prevention of Cruelty to—Univalves. Some hint that the celebrated Tyrian dye of the ancients was produced from these shell-fish; but it is more likely that the famous Tyrian purple dye was obtained from orchil or corcair, so plentiful on their rocks.

If *cochleæ* could be procured in sufficient quantities to dye large pieces of linen, the beauty of the fabric could be enhanced, and also the price, the colour thus obtained being so beautiful, exceeding that of corcair.

Foreign importation, mechanical appliances, and chemistry have of late years been fastly superseding old native ways and means. Yet it is hardly to be doubted that, in the bustle and din of now-a-days, much that is valuable is lost sight of, because it has dropped out of use, at a time when there was no method employed or properly known for utilising it. We have under our very feet material for many things quite equal to what we often send several thousands of miles to procure. Our mountains, bogs, and sea-beaches are mighty and gigantic undeveloped resources of fuel, building materials, food, and minerals. By the talismanic touch of industry and energetic labour, they may be made to yield animal sustenance for our bodily wants and materials for our domestic uses.

Of colour in the concrete and in the abstract much might be usefully written, as also of the manufacture and manipulation of colours for fine art and domestic purposes; but these latter branches of the subject would lead us into extensive technical fields, foreign to the immediate topic.

* We have seen young walnuts used often for dyeing purposes, and we have known them to be used in different parts of Great Britain and Ireland, for producing a deep yellowish brown colour. We believe them to be a powerful dye, and when fixed with a pure mordant, the colour would be everlasting. Lighter or brighter shades can be managed by the treatment given. It is surprising what beautiful dyes or colours the early inhabitants of these countries produced, destitute of any knowledge of chemistry, and of the ingenious method they devised for fixing the colours produced.

ARCHITECTURE FOR INDIA.

WE quote an additional portion of Lord Napier's Lecture on Architecture already referred to:—*

The march of Mussulman conquest is generally associated with images of desolation, and no doubt in some respects with justice. The disturbance of existing laws and a violent change in the depositories of power must, under all circumstances, be associated with some oppression of productive industry, of arts and of letters, and there was much in the principles of the Mahomedan religion and the practice of its early sectaries to aggravate those inevitable evils. The Mussulman invaders rarely fostered or practised agricultural labour, they rather lived wastefully on the labour of others. They had little respect for the poetry, the philosophy, or the history of the subjected races, the science which they adopted from the conquered they did not much improve, while the maxims of their faith, impatiently confounding worship with representation, prohibited the imitation of the human figure in painting and sculpture. The progress of Mahomedanism was not, however, entirely destructive. Excluded from half the dominion of the Fine Arts, the ardent and the refined genius of the Arabs fired by an enthusiastic belief in the sublime dogmas of the spirituality and unity of God, expended itself in the creation of an order of religious architecture which has never been surpassed in the history of the world. Nor was the secular branch

* See p. 680, *ante*.

behind the sacred. Bred in the invigorating atmosphere of revolutions and conflicts, many of the Mussulman rulers discovered generous abilities and tastes. The fine arts, in a limited sphere, were the indispensable attendants on the pleasures of their courts, and there are proofs in the memoirs of some that they took a personal dislike in the patronage and practice of poetry, music, gardening, and design. From Granada to Constantinople, from Constantinople to Samarcand, and from Samarcand to Bejapore, the earth is adorned with the masterpieces of Mussulman piety and taste, and too often strewed with their remains. In contemplating this admirable development of art, it is but just to observe that it started from an advantageous basis. The Mussulmans found in Syria, Egypt, Northern Africa, Spain, Asia Minor, and Byzantium, the monuments of ancient Roman architecture, at least in partial preservation, and a new style growing up under the influence of Christianity, which, if in some respects barbarised, was still, as experience proved, possessed of a fruitful vitality, and pregnant with the most beautiful developments. The capital features of the style, whether pure in the Pagan forms or in process of Christian transformation, were the arch and dome. These the Mussulmans adopted and diversified, and having added the minaret, they thus composed a group of architectural forms, in which dignity, elegance, and the picturesque are united with perfect constructive science. The Mussulman forms are, however, not only beautiful and scientific, they are in the highest degree flexible and useful, they unite cheapness with adaptability.

Mussulman architecture requires the least amount of ornament conceivable, though it is capable of receiving a great amount of ornament. As the lines are harmonious and aspiring, the lines alone please the eye. While the Hindu and the Greek require to be loaded with sculptural decorations, without which they would appear poor and bare, the forms and combinations of the Saracenic possess an independent and satisfying grace. But there is not only an economy of ornament, there is an economy of material. The horizontal styles, those which are represented by the pillar and the beam, demand when the spaces to be covered are considerable, and the supports are distant from each other, a vast application of material in its most weighty and expensive form. But the arch and the dome offer, as I have said before, a combination of parts, each small and cheap in itself, but capable together of spanning the largest areas at the smallest cost. The Saracenic forms can also readily be adjusted to any destination. Most excellent in the sphere of their primitive application for divine and solemn purposes, for the mosque, the cloister, and the tomb, they are equally available for habitations of great and small dimensions, for halls of public assembly, for galleries and exhibitions, for railway stations, for repositories of goods, for theatres, conservatories, and lecture-rooms—in fact, for all the diversified requirements of modern social life. I do not know whether it has been suggested that the Saracenic style appears also to be best adapted for iron constructions, and especially in this country. It is true that the dome and the arch, so congenial to iron building, belong to other styles as well as to the Saracenic, for instance, to the Roman; but the proportions belonging to the Roman style are more massive than would be suitable in iron, nor does the Roman offer as a great variety of designs as the Saracenic for screens, railings, perforated surfaces, and other subordinate decorative objects.

I hope I shall not be considered fantastic in remarking, that a feature in the Saracenic architecture peculiarly attractive is the sympathetic manner in which it associates itself with gardens and trees, and with all the forms of natural scenery. For parterres of the regular kind, the geometrical patterns peculiar to the style supply an exquisite frame-work; while the cypress and the plane, the types of aspiring and spreading vegetation, appear to be repeated with a sort of rythmical concord in the minaret and cupola. It is not in the power of all to admire these harmonies beside the rushing current of the Bosphorus, or on the slopes of the Bythinian Olympus, or at Cairo, where the Caliphs sleep between the city and the desert, or where the dust of Shah Jehan and Moumtaza Mahal rests under an incomparable canopy, near the waters of the Jumna; but go to the quiet garden at Seringapatam, go to the grove of tamarinds and palms beneath the rocks of Vellore, where the funereal repose is accompanied by the muttered Koran and the murmur of waters from the well; there you will still feel how the voices of nature and art, of beauty, divinity, and death are blended by the Mussulman builders.

It has been remarked by Mr. Fergusson, in a recent lecture, that the forms of Hindu and Mussulman art have been happily associated in secular buildings. This union has taken place sometimes through the adoption of Mahomedan forms by Hindu architects, sometimes through the employment of Hindu artists by Mussulman princes. Fine examples of the former method are to be seen at Bejeanugger, and also at Madura, to which the Naick chiefs transplanted the arts of the Telugu capital on the Toombuddra. Examples of the latter abound among the later works of the emperors of Baber's line. Under Akbar and Shah Jehan it almost seemed as if an attempt had been made to effect a reconciliation between the arts of the Hindus and Mussulmans, corresponding to that which was so happily established for a time in their political and social relations. It must be allowed that the architectural combination is often effective and picturesque, yet I think that the mixture is to be deprecated. The Hindu and Mussulman may borrow from one another with less disadvantage than from the European, and I would even allow that the first may occasionally employ the Saracenic arch combined with their own decorative details; but the Mussulmans should never adopt anything from any foreign source whatever. They possess a perfect style, which can only be debased by alliance. The corruption of the Saracenic is very remarkable in Mysore and the Carnatic. At Seringapatam you may see the Mussulman cupola surmounting a Hindu colonnade. At Wallajahpet, in a mosque of recent construction, the façade is composed of a classical portico with Saracenic pinnacles, while the surrounding cloister is Hindu. Similar degradations may be observed at Madras. There is a handsome tomb, erected in Triplicane about the beginning of the present century, where Roman pilasters and vases, with Hindu details, are all incorporated with a Saracenic outline. The great mosque of Triplicane, constructed in part of noble materials, and in a style of severe simplicity, seems to stand forth as the last protest of a dying art, and to rebuke the degeneracy of the present age. To the Mussulman youth who aspires to taste and knowledge, I would say, as I have said to the Hindus,— respect, preserve, study, and imitate the works of your ancestors, using their examples not slavishly, but with intelligence, modifying them, in their native spirit, to the requirements of the time.

The Governments of India might, in my humble judgment, do well to consider whether the Mussulman forms might not be adopted generally as the official style of architecture. Very little study would render them familiar to the English and native builders. They would be found, after a short experience, to be cheaper than the present forms, and far superior, with reference to shade, coolness, ventilation, convenience, and beauty to all that we see around us. This Government has endeavoured, with the advice of an accomplished architect, to exhibit in the improvements at the Revenue Board an example of the adoption of the Mussulman style to contemporaneous use. Mr. Chisholm would be the first to disclaim and condemn the material, which has been forced upon him by necessities to which we are still subjected; but his design will be a practical demonstration of the views which I have here advocated. He has paid the first tribute to the genius of the past; he has set the first example of a revival in native art, which, I hope, will not remain unappreciated and unfruitful.

SHEFFIELD.

New Music Hall.—The chief stone of a new concert-hall, in course of erection in Barker-pool, has been laid by the Duke of Norfolk, in the presence of a numerous assemblage of people. The edifice will be in the Italian style of architecture, though it will not be very elaborate in its decorations. The principal entrance will be in Barker-pool; and it is intended that the pavement along the whole front shall be covered in, so that no inconvenience may be experienced in wet weather by persons leaving or going to their carriages. The entrance opens into a hall 26 ft. square, on each side of which are waiting-rooms, and two wide staircases, one leading to the floor of what will be called the "great" hall as distinguished from one of less proportions, and the other also leading to that floor, and affording an entrance to the balcony and to the first gallery. In addition to the waiting-rooms in the entrance-hall, there will be two refreshment saloons. Another entrance to the building will be in Burgess-street, and a third entrance at the end of the hall farthest from Barker-pool. Two distinct staircases lead to the principal gallery, and there are other staircases for the use of the orchestra, performers, and others. Adjoining the Burgess-street entrance there will be the "little" hall; not very little, however, for its dimensions are 60 ft. by 30 ft.; and leading from it there will be several waiting and retiring rooms for musicians, performers, and so on. This hall will be used for rehearsals and for small concerts. At the top of the staircase in the main entrance there are two spacious corridors, one extending along the whole front of the building, and the other running down the western side. By means of these, and by four doors in the various parts of the room, entrance is obtained to the floor of the large hall, the dimensions of which are 120 ft. by 60 ft. In the interior the sides will be broken up by pilasters, and the ceiling will be of wood coved, and decorated with perforated panelling, which will be used for the purpose of ventilation. The height of the hall is 50 ft. in the centre and 43 ft. at the sides. The balcony, which is approached by its own staircase, will be two seats only in depth, with a passage at the rear. Behind that at the Barker-pool end there will be a small gallery, and above it the principal gallery, which will extend the whole width of the end of the building. Near to the orchestra there will be a couple of private boxes. The hall will be capable of accommodating 2,500 persons comfortably, but by removing the seats from the floor upwards of 500 more could gain admittance. The town has long wanted such a building. Messrs. Flockton & Abbott are the architects.

Proposed Art and Industrial Museum.—On September 1st, at the Cutlers' Feast, Mr. W. Bragge, the new master cutler, declared his intention of making it his business, during his year in office, to establish in Sheffield a museum useful to the art industry of the town. On the following day a meeting was held, at which a committee was appointed for the promotion of the work; and Mr. Cole, on behalf of the Science and Art Department, stated what assistance could be demanded from the Government.

The Norfolk-street Improvement.—The Under-Sheriff of Yorkshire, Mr. W. Gray, and a special jury, have been occupied at the Town-hall, in assessing the value of certain property required by the Corporation. The claimants were Miss Elizabeth and Miss Helen Shearwood, of Sharrow, who are interested in some property in Market-street, Commercial-street, and Market-place, which is required by the Corporation for the improvement authorised by the Local Government Supplemental Act of 1858, and which is known as the Norfolk-street improvement. The Corporation were unable to come to terms with the Misses Shearwood as to the value of the property, and consequently a special jury was summoned to assess the value. The property is divided into three parts. Of the first portion the claimants own two-thirds; in the second they have a similar interest, subject to a lease of which nearly twenty years remain unexpired; and in the third they own the two-thirds of an individual moiety or half part, the former owners of the other moiety being the Trustwell Brewery Company, who have sold their interest to the Corporation. The claimants assessed the value of their interest at 5,000*l.* each—in all, 10,000*l.* The amount which the Corporation offered for their joint interest did not reach half that sum. The jury having paid a visit to the property, Mr. Digby Seymour, in opening the case, contended that the sum which the claimants had asked was not extravagant, and in support of this he proceeded to call witnesses. Mr. W. Blackmoor, architect and surveyor, Rotherham, stated that he had made a valuation of the property, and his estimate was 12,693*l.* 6*s.* 6*d.*; adding 20 per cent. for compulsory sale, his estimate would be 15,230*l.* 18*s.* In cross-examination by Mr. Lloyd, Mr. Blackmoor stated that his calculation was based upon the prices which property had recently fetched at auction sales in Sheffield. Mr. William Henry Eadon, of the firm of W. H. & J. A. Eadon, auctioneers and valuers, Sheffield, had valued the property at 12,208*l.*, exclusive of 20 per cent. for compulsory sale. Witness asserted that it would have fetched that sum had it been offered by auction. Mr. Thomas Henry Jenkinson, architect and

surveyor, Sheffield, said his estimate was 12,251*l.*, with 20 per cent. to be added to that amount for the compulsory sale. Mr. Thomas Fenwick, of the firm of Messrs. Martin & Fenwick, civil engineers and surveyors, Leeds, also gave evidence in support of the case of the claimants. Mr. Lloyd then addressed the jury for the Corporation. He said that his clients had made an offer of 2,130*l.* to each of the claimants for the sake of peace, and in consideration of the costs that would be incurred by litigation. Mr. S. F. Holmes, borough surveyor, was then examined. He said he had been connected with Sheffield public works for twenty-two years. He purchased for 400,000*l.* the property of the Midland Railway Company which passed through the full length of the town. He had examined and valued the property for which the present claims were made. His estimate was 3,517*l.* 16*s.* 8*d.* for the whole of the property. As to compulsory sale he first of all added to his valuation ten per cent., but as he should have had to deduct ten per cent. in consequence of the property being in moieties, he had put one against the other. Mr. Thomas James Flockton, of the firm of Abbott & Flockton, architects and surveyors, Sheffield, agreed with Mr. Holmes on all the questions of valuation. He only differed in the discount to be allowed for reversion, which would make an additional sum of 114*l.* Mr. Joseph Nicholson, auctioneer and estate agent, Sheffield, thought Mr. Holmes's valuation was a very liberal one. Mr. D. Seymour having briefly replied on the part of the claimants, the Under-Sheriff summed up. After an absence of about an hour, the jury awarded 1,880*l.* 2*s.* 8*d.* to each of the claimants.

SCIENCE AND ART DEPARTMENT.

THE results of the late examinations in drawing held by the Science and Art Department are as follow:—As respects schools for the children of the labouring poor—in 1,376 examined, 98 544 children and pupil teachers worked 114,964 exercises, being an increase on the numbers examined in 1869 of 282 schools, 16,093 children and pupil teachers, and 19,750 exercises. As respects schools of art and art night classes,—in 394 schools examined, 16,361 students worked 24,370 second grade exercises; an increase of 91 schools, 3,587 students, and 4,330 papers. From 347 schools of art, night classes, and science classes, 13,660 students submitted to the Department for examination 90,889 drawings executed in the ordinary course of the year's study, being an increase of 126 schools and classes, 3,735 students, and 25,440 drawings. In 1869, 75 candidates were examined for the third grade, or art master's certificate. These worked 302 exercises, and 25 candidates were successful. In February last 78 candidates, who worked 316 exercises, were examined, and 27 succeeded in obtaining the certificate. Finally, the total number of schools examined in drawing this year is 1,824, and of candidates 128,634, by whom 230,269 works and exercises were executed, showing a total increase in twelve months of 404 schools examined, 23,418 candidates, and 49,534 works and exercises. In the last three years there has been a total increase of 1,146 schools, 76,412 candidates examined, and 160,867 worked exercises.

THE DRINKING FOUNTAIN MOVEMENT.

A GRANITE drinking-fountain, which has been erected under the auspices of the Metropolitan Drinking Fountain and Cattle Trough Association at the railings of St. Botolph's Church, Aldersgate-street, has been opened for use. The cost of the fountain has been defrayed by the daughters of the late Mr. Ward, in memory of their father, who was formerly one of the churchwardens of St. Botolph.

A drinking-fountain has been presented to the inhabitants of Loughborough by the Venerable Archdeacon Fearon, at the cost of, we believe, about 150*l.* It has been erected in the Market-place by Mr. Forsyth, of London. A public presentation by the archdeacon has taken place in the presence of a large crowd of spectators. The fountain is of Portland stone. The central portion, square on plan, is 10 ft. high. The lower portion to the level of the marble drinking-basins is of vermiculated rustic work. From this portion spring four Cornish granite columns, having carved capitals, carrying a groined canopy, enriched with a carved cornice, and terminating in a double-light globe lantern. Within the space inclosed by the columns is a small fountain with convolvulus jet, the water from which falls into a basin below. Jets of water also spring from conventional lions' heads on opposite sides, and serve to supply troughs intended for the use of cattle. The drinking-basins, which are of veined marble, are approached by two steps on each side, and the surplus water from them is conveyed into a small dog-trough.

THE SANITARY CONDITION OF TAUNTON.

WE have lately visited this town, and while we were pleased to see the streets well cleansed and watered, we regretted to find a defective system of sewerage and drainage. The sewage of the town empties itself, or is supposed to empty itself, into the Tone; but the water of the river is on a level with a greater portion of the town. There is, in consequence, for over a mile of its length, little short of a stretched out cesspool. Plans have been often suggested for getting rid of the sewage; but as none of these have been adopted, danger might have been foretold. Capt. Beadon, who owns a fishery on the Tone, has, by his action, opened the eyes of the local functionaries. A few days since he served the Local Board of *Health* with a notice that unless they abate the nuisance in the river, he will, by an application to the Court of Chancery, obtain an injunction for preventing their sending any more sewage into the river. The Captain has gone so far as to place the necessary papers in the hands of counsel. It remains to be seen now how the local authorities will act. When the health of the inhabitants of a town becomes a primary consideration instead of a secondary one, the right men will be found to be in the right place, but not till then.

RAILWAY MATTERS.

New Metropolitan Railway Route.—A new railway route, by which the stations on the North London Railway will be brought into direct communication with Blackwall, and collaterally with Greenwich and Woolwich, has been opened. This has been effected by the completion of the connecting line between the North London and Blackwall Railways; and the advantage arising from it to the public travelling over the North London system will be, that while the train service has hitherto worked only as far as Poplar, it will now be extended to Brunswick-pier Station, Blackwall, and so form a connexion by steamboat with Greenwich and Woolwich. The trains to and from Blackwall will run every quarter of an hour, and the boats to and from Greenwich and Woolwich every half-hour.

Cheap Railway Fares.—The directors of the Great Eastern Railway have determined to abolish express fares, and have placed all the trains on the ordinary fare rate.

Destruction of a Railway Bridge by Fire.—A bridge, to a large extent composed of wood, which crossed the Esk near Dalkeith, on the Waverley route of the North British system, has been destroyed by fire. The origin of the fire is attributed to some red-hot ashes falling from the engine of a goods train. The traffic is considerably impeded. It is carried on by means of a loop-line, which joins the Waverley route south of Dalkeith, and the Berwick line of the North British east of Inveresk.

Railway Traffic Returns.—According to the *Railway News*, the traffic receipts of the railways in the United Kingdom for the week ending September 2, 1870, upon a mileage of 13,767, amounted to 899,769*l.*, being equal to 65*l.* 7*s.* per mile. For the corresponding week of last year, the receipts were 872,548*l.*, the number of miles open 13,335, or 66*l.* 8*s.* per mile. A comparison of the two weeks shows an increase in the aggregate receipts of 27,221*l.*, and in the number of miles open of 432.

A Tall Chimney at Bagillt, in Wales.—The new chimney which has been erected by Messrs. Walker, Parker, & Co., Dee Bank Lead Works, is now being completed. It is 91 yards in height; and being built upon a hill, it can be seen for many miles around. A "Steeple Jack" was recently to ascend from the outside to fix the lightning conductor. One of the workmen has been walking, in fool-hardy bravado, round and round the top of the chimney.

ARCHÆOLOGICAL MEETINGS.

SOMERSETSHIRE.

THE twenty-second annual meeting of the Somerset Archæological Society commenced at Wincanton, under the presidency of Sir W. C. Medlycott, bart., of Venn, Milborne Port. The members and friends assembled in the Town-hall for the transaction of the annual business. The attendance included a number of ladies.

After the formal business of the meeting had been gone through, the first paper which was proposed to be read was by the Rev. H. D. Wickham—"Civil Historical Notices of Wincanton and its Neighbourhood." The president, having first read a short statement, extracted by himself from Macaulay, of the battle which took place near Wincanton between William of Orange and James II., remarked that there was a much more detailed account in an old pamphlet, which might be interesting to the society at its meeting in this locality. The president then called the attention of the assembly to the printed programme of proceedings.

Rev. H. D. Wickham said, since that paper was drawn out, a very interesting discovery had come to their notice, which would render it desirable to deviate a little from the form of to-morrow's examination. The deviation would not be much, for it was only about a mile from Wincanton, on property belonging to Mr. Dendy, that a tesselated pavement had been recently discovered, and some other remains, which he thought would be interesting to the society to visit. It would be only to turn out of the way a quarter of a mile, and then rejoin the road, and go on to Cadbury. The discovery alluded to appeared to be the remains of a Roman villa.

Mr. Wickham then read his paper, as announced by the president.

The Rev. Canon Meade read a paper on the history of Castle Carey Church, as gleaned from diocesan and parish registers and churchwardens' accounts. The Rev. Canon, in the course of his paper, said he wished to relieve the parish from a stigma which had been cast upon it. The late Mr. Russ was told by a traveller in Southampton that Castle Cary was a most barbarous place, "because it was the only place where cockfighting was thought to be a practice fitting to be recorded on a tombstone in the churchyard!" On his return Mr. Russ went straightway to the churchyard, and after considerable search found a tombstone on which were sculptured two birds, standing opposite, and apparently ready to peck at each other. However, by dint of careful examination it was found that the old stone was in memory of a respectable family named Swallow. The birds, therefore, that were mistaken for cocks were intended for swallows, and instead of fighting, were meant to be billing; and they evidently formed a rebus upon the family name!

Mr. W. A. Jones, M.A., F.G.S., read a paper on Lord Chief Justice Dyer; the Rev. J. Heale gave an account of Poyntington Church; the Rev. W. Barnes, the "Dorset Poet," discoursed on "Somerset and its Language," on each of which a discussion took place.

A visit was then made to the church, which contains a few points of archæological interest, and afterwards the members partook of *déjeûner* at the Greyhound Hotel, at which Sir W. C. Medlycott presided.

A temporary museum was arranged in the National School-room, and was inspected with much interest by the visitors.

An evening meeting for the reception of papers was held, when the following was the programme:—The president, on the civil war in Somerset, as detailed in an ancient and rare pamphlet; Mr. Emmanuel Green, on the battle at Langport; Mr. John Batten, on the sequestrations in the manor of Catsash; and Mr. Edward T. Stevens, of the Blackmore Museum, Salisbury, on "Flint and Stone Implements."

The programme for next day included an excursion from Wincanton to North Cadbury, Cadbury Camp, Compton Church, and Mapperton. Luncheon was provided in the school-room at Compton. The day following the members were to leave Wincanton for Templecombe, Stowell, Milborne Wick encampment, Milborne Port, Henstridge, reaching Templecombe station at 7 p.m. The members were invited by the president to luncheon at Venn.

The report of the council, which was unanimously adopted, contained this paragraph:—"With the view of preserving, as far as may be, all the more interesting monuments of antiquity which are scattered over the country, your

council are strongly impressed with the necessity of placing them under the supervision of the State, and they would therefore recommend that a memorial be forwarded from the members of this society to her Majesty's Secretary of State for the Home Department, to urge on her Majesty's ministers to take such steps as shall effectually preserve the more important remains of past ages from injury and decay."

Mr. John Batten referred to the importance of the clause, and said that the subject had been taken up by the Society of Antiquaries, and this society would do well to follow in their steps. At the request of the president, Mr. Batten drew up and moved the following motion, which was seconded by Canon Meade, and unanimously carried:—"That it be an instruction to the council to procure a list of such memorials of the class referred to in the report as it would be desirable to place under the care of the State, and to obtain, if possible, the co-operation of the proprietors of those memorials in carrying out the wishes of the society."

YORKSHIRE.

The Huddersfield Archæological and Topographical Association have held their fourth annual excursion. At a special general meeting held in the course of the day, they resolved to change their name to the "Yorkshire Archæological and Topographical Association." The destination on this occasion was the ancient borough of Pontefract. The meeting comprised members from all parts of Yorkshire. The bulk of the excursionists arrived in Pontefract at a little after eleven o'clock, and were received and welcomed by Mr. William Jefferson, the mayor, who wore his chain of office. Lieut.-col. Brooke, the president, returned thanks, and the excursionists proceeded at once to examine the objects of interest in the neighbourhood, under the guidance of Mr. T. W. Tew, and the secretary, Mr. Fairless Barber.

Having inspected Swillington Tower and the Upper Guard House, where the courts of the Duchy of Lancaster were formerly held, the party proceeded to the remains of the famous old Castle of Pontefract, where a special general meeting was held, the president of the Association in the chair. The company then heard a paper by Mr. Tew on the history of the surrounding neighbourhood, with especial reference to the castle. They then proceeded to make a minute inspection of the remains of the castle. After admiring the present romantic aspect of the desolate but stately ruins, the walls of seemingly impregnable thickness, which formed a part of the artificial and natural defences of the castle, looking formidable even in their decay, and the remains of the gigantic keep, which has obstinately defied the ravages of ages, the antiquarians turned their attention to those parts of the old fortress which called for special study. After visiting St. Clement's Chapel, they proceeded by a long subterranean descending passage to the magazine, which is cut in the solid rock. The vaulted chamber in Pyer's Tower, in which King Richard II. is said to have perished, was regarded with interest, as were also the Barbican and the dungeon, in which we may suppose many prisoners to have languished.

On leaving the castle, the party wended their way to the rock-cut hermitage, which is one of the most interesting antiquities in Yorkshire. The inspection of the visitors was much facilitated by Mr. James Fowler, F.S.A., who read a paper on the history and character of the scene. He traced the history from the first mention of the hermitage by Thoresby, in 1703. It seems it was founded in the year 1386, by Adam de Laythorpe and his son Robert, and in 1433 became attached to Nostell Priory. There was a garden surrounding the dwelling of the hermit, which he might cultivate at his leisure, and from this runs a narrow passage, leading to what was the dwelling. An irregularly quadrilateral chamber cut in the rock is reached, and by descending another flight of steps, access to a spring of water of crystal purity is obtained. On the west side of this secluded dwelling is the cavity in the rock which served the hermit for a chapel. The altar and the reading-desk, also of rock, still remain intact, and on the opposite side to the altar is a settle, which must have been used by the hermit to repose or to meditate on, as did the Sibyl of Æneas in the cave at Cumæ.

From the Hermitage the company went to the Town Hall, where a museum, containing archæological curiosities, had been made up of loans from Lord Houghton and others of the leading gentry of the district. The MSS. formed the most interesting portion of the exhibition. They comprised the ancient charters of the town, from that of Richard Cœur de Lion, A.D. 1194. In this, the oldest of the charters, the borough is referred to as "Ponti Fracto." Relics of the earliest ages of the place were shown. The Church of St. Giles; an old house in which King James II. is said to have held his court, and which contains a fine old specimen of wood-carving; and a strange vault below the Malt Shovel public-house were next visited. The company then assembled in the Red Lion Hotel for luncheon.

At luncheon, the party was joined by a number of the distinguished residents of the neighbourhood. The president took the chair, and he was supported on his right by Lord Houghton, on the left by the mayor of the borough.

After luncheon, carriages were taken to All Saints' Church, which is mostly in ruins. The Rev. Sir Thomas Blomefield, bart., incumbent, received the visitors. Mr. J. T. Micklethwaite, F.S.A., read a paper descriptive of the place, which used to be called the Minster of the Moors. During the reading of the paper the company assembled in the transepts of the old building, which have recently been renovated for divine service. Special notice was directed to a remarkable double-stair in the tower, said to be almost the only specimen of the kind in England. A model of the staircase was exhibited in the church. The "New Hall" was the last object inspected by the party. This is an old ruined mansion of the latter part of the sixteenth century. Its history, from the earliest period down to the period when the mansion became possessed by the Earl of Harewood, was related by Mr. T. M. Tew, who accompanied his lecture with some sketches. Carriages were taken from the "New Hall" to the railway-station, where a large part of the company departed to their respective destinations. The trip was in every respect successful.

NORTH OXFORDSHIRE.

This society has just visited Burford, whose fine old church is now being restored under the superintendence of Mr. G. E. Street. The members of the society, with the addition of two gentlemen of the town, numbering sixteen, sat down afterwards to a dinner at the Bull Inn. Mr. Lockwood, of Kingham, a vice-president, presided. After dinner, the Rev. J. H. Burgess, vicar of Burford, read a paper on the history of Burford.

COMPULSORY EDUCATION IN SCOTLAND

THE subject of Compulsory Education occupied the attention of our fathers nearly three centuries ago. In an interesting volume, lately issued from the Glasgow press, entitled "Fifiana; or, Memorials of the East of Fife," by M. F. Conolly, the following extract from the record of the Kirk Session of Anstruther-Wester appears. As an evidence of the custom of the times, and the zeal of the Kirk Session, in enforcing the education of the youth, it is valuable. We give it in the quaint dialect of the period:—

"Oct. 26, 1595.—Anent the complent given by Henrie Cunyngham, doctor in the shcooll, the Session think meit that all the youth in the toun be caused to com to the school to be teached. And that sic as are puir shall be furnished vpon the comone expenses; and gif ony puir refuisis to com to schooll, help of sic thing as they neid and requir, shall be refused to them. And as for sic as are able to sustein their bairnes at the schooll, and do their dewtie to the teacher for them, thay sall be commandit to put them to schooll, that thay may be brocht vp in the feir of God and vertue. Quhilk if thay refuse to do thay sall be callit before the Session and admonished of their dewtie; and if efter admonishon, they mend not, then farther ordour shall be taken wt them at the discretion of the Session. And the magistrates and counsell shall be desyred to tak fra them the quarter payment for their child, and ane dewtie, efter ther discretion for the dayes meat, as it shall co about vnto them, whidder thay put ther bairnes to the school or not.

18 of November.—Anent the puire, it is thoet meit that a visitation shall be; and that sic help shall be maid te them that ar altogether vnable, that may not travell to themelfis. And the young shall get na almess bot on condition that thay cum to the schooll, quhilk sa mony as does shall be helpit; and the manner of ther help shall be—thay shall haif thrie hours granted to them everie day throw the toun to seek ther meit, ane hour in the morning fra nyn to ten, at mid-day fra twelt to ane, and at nycht fra six hours furth; and the peiple are to be desyred to be helpful to sic as will giv themself to any vertue, and as for others to deall lyardly with them, to dryve them to seik efter vertue.

April 13, 1596.—Everie man within the toun that hes bairnes suld put his bairnes to the schoolle, and for everie bairne suld give ten sh. in the quarter, and be fried of given meat bot a yr, owning plesure.

September 7, 1600.—Item anent the schooll:—Agreid with Henerie Cunyngham, that the pure of the toun shall be put to the [school], and sa many of them as has ingyne, and he taks paines upon them, sall giv fyv sh. in the quarter, quhilk the session sall pay. He sall try out the bairnes. They sall be brocht befoir the Session be the elders of the quarter; the Session sall enter them to the scule, and try ther perfiting, and sa caus recompens according to his pains and ther perfiting. And as for vther yt are not able to perfit, yt thay may reid or wret, whidder it be for want ingyn or tym to await on, sic shall be caused to lern the Lordis Prayer, the Comandes, and Belev, the heads of the Catechisme that are demanded on the examinatioun to the Communion, quhilk travell also the Session will acknowledge and recompense: and as for the standing yearlie dewtie, refers that to the counsel of the toun to tak ordour wt."

It will be seen by these extracts from records nearly three centuries old that the idea of compulsory education, is not a modern thought. Doubtless Scotland is much indebted to this wise provision of the Kirk Session (for it was common to other places in Scotland besides Anstruther Wester) that education among even her rural population has been in advance of the same class in England.

There is one drawback, however, to the above pleasing picture of early zeal in the cause of the education of the children of the poor. The Kirk Session, a little more than a century later in Anstruther, undid the good work of their predecessors, as the following record shows:—

"1 May, 1700.—The Session appoints aney thre elders to clear accounts with the schoolmaster, and pay what is due to him by the Session, against Whitsunday next, and likeways informe him that they have no design to keep aney Scholmaster nor Precentor, both upon account of the indisposition of the minister and the poverty of the place." On the 29th of the same month we are told curtly,—"This day Mr. David Ballingall, Schoolmaster, Precentor, and Session Clerk, did dimit."

Though the schoolmaster got the "sack" by the Kirk Session of Anstruther in 1700, he did not go abroad from other towns in Scotland. The disciples and followers of Knox kept knocking at the door in the interest of their church.

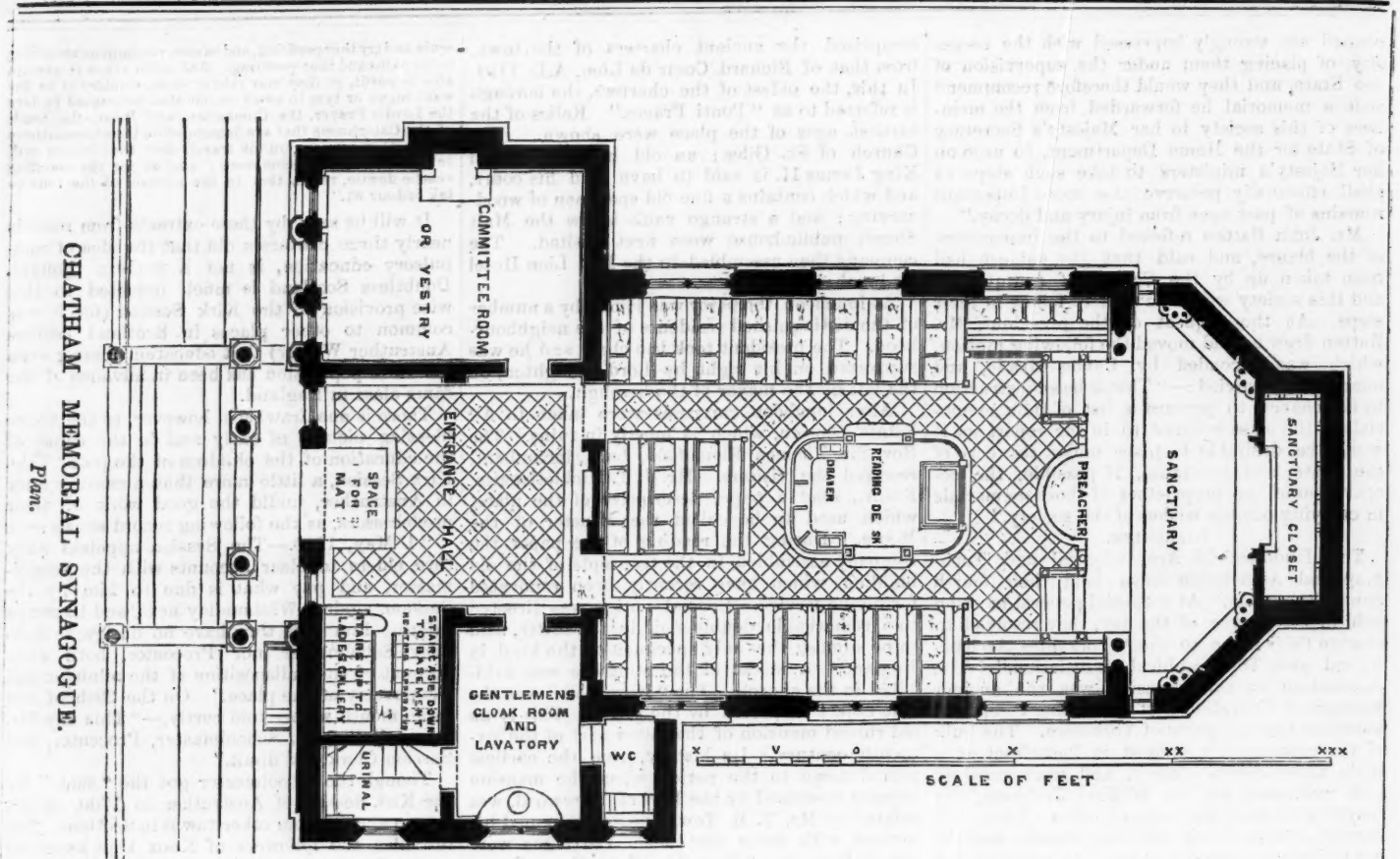
It may be worth while to state that "wee Davie" the schoolmaster's salary was only 16*l.* 13*s.* Scots, or 1*l.* 7*s.* 9*d.* sterling, a not very fat salary even at that age, more particularly if he had to perform his triple duties of session clerk, precentor, and schoolmaster.

CHATHAM MEMORIAL SYNAGOGUE.

THE building we are about to illustrate and describe has been erected in Chatham by Mr. Simon Magnus, in memory of his only son, Captain Lazarus Simon Magnus, who was cut off in his prime. Mr. Magnus purchased the site of the old synagogue, the Jewish burial-ground, and some land covered with houses fronting the High-street, and has erected a synagogue, a rabbi's residence, enlarged and adorned the cemetery, and given an endowment for the maintenance of public worship for ever,—expending on these monuments to the departed some 8,000*l.* The cemetery is approached by a road between the synagogue and the rabbi's residence.

We may premise that a marble tablet over the entrance portico records the cause of the erection and object of the building. And in the wall fronting the street, to the right of the entrance, is the foundation-stone, having an inscription. The tablet within the entrance-hall, "In memoriam," records that Lazarus Simon Magnus was born in April, 1825, and died January, 1865, aged 39.—"May his soul be bound up in the bundle of life everlasting."

The style adopted is that of the Byzantine period, adapted to the requirements of the present age. Recessed from the main road, and separated from it by an ornamental screen, the building is placed on a terrace, and is approached by a broad flight of steps which lead to a pedimented portico, composed of monolithic columns of Mansfield stone, having floriated caps and supporting semicircular arches. Over this portico is placed the marble tablet before mentioned. Surmounting the entrance is inscribed the Scriptural monition—"Keep thy foot when thou goest to the House of God" (Ecclesiastes v. 1). On the right of this portico, rising to a height of about 50 ft. from the ground, is a tower, which is terminated by a steepled roof, ornamented with gablets and finials. On the left is the committee-room, and behind the portico is seen the gabled and octagonal end of the synagogue, with bold wheeled window and other ornamental adjuncts. The whole of the erection is faced with Kentish rag-stone, with Bath stone dressings, having columns and enrichments of red Mansfield stone. Separated from the synagogue is the minister's house, treated in the same style, and being complete in itself. A broad walk divides the last building from the



CHATHAM MEMORIAL SYNAGOGUE.

Plan.

synagogue; and, from its commencement to its end, affords an uninterrupted view, from the High-street, of the tomb of the deceased Captain Magnus, which, raised on granite steps and platform, and surrounded by marble columns, appropriately and effectively terminates the vista.

Entering from the portico is a spacious hall, on the right of which is the staircase leading to the ladies' gallery, and the retiring-rooms of the gentlemen, and on the left of which is situated the committee and robing room. Immediately facing the entrance is a marble tablet, with the words "In Memoriam" engraved thereon in gilt letters, and an aspiration for the repose of the departed soul. From the hall we at once pass into the ground floor of the synagogue, appropriated exclusively for the male portion of the congregation. The interior consists of a nave of lofty proportions, divided into three compartments by arches composed of serrated and ornamental white and red bricks, with carved stone incised enrichments. These arches, springing from and being supported by clustered and coupled columns of red Mansfield stone, have floriated caps and bases, and rest on carved projecting corbels. On these arches are laid the timbers of the roof, which are of picked yellow deal, wrought and chamfered, covered with V-jointed boarding, enriched with carved fascias exposed to view, and stained and varnished in various tints. The walls, which are of white bricks, interspersed with carved stone enrichments, are pierced with traceried windows, three on each side of the synagogue, filled in with stained glass.

Facing the entrance, at the east end of the building (corresponding with the chancel of our churches), rises an enriched semicircular arch, supported on polished red Mansfield stone columns, bound together with ornamental bands, and having carved caps. On this arch is engraved, in Hebrew and English, the 4th verse of the 84th Psalm,—"Blessed are they that dwell in Thy house: they will be still praising Thee. Selah." Behind this archway, forming, as it were, a frame, and being the entrance to it, is situated "the sanctuary," separated from the nave by a carved stone screen, inlaid with various coloured marbles, and having wrought-iron panelling. In the centre of this screen is formed a convex recess, which will be used as a pulpit for the preacher. "The sanctuary" is elevated some few feet above the level of the floor of the synagogue, and is approached by broad flights of polished marble steps, with balustrading. This sacred portion of the edifice is designed as an octagonal apse, at each angle of which are disposed clustered pillars of variegated coloured marbles. From these pillars spring carved ribs supporting a domical ceiling, terminating in a skylight glazed with stained amber glass, which throws a subdued light over the whole composition. In the centre of the sanctuary is formed a deep recess designated as "The Ark," or resting-place of the scrolls of the Law (each scroll contains in Hebrew characters the five Books of Moses), which are deposited therein. This recess is inclosed by sliding doors, framed of costly wood, and enriched with arabesque and other ornamentation. The interior is hung with silk hangings and bullion fringes, and is fitted with a dais for the reception of the scrolls. Over the Ark is inscribed in gold letters the sacred warning,—"Know before whom thou standest;" and on each side of the same, surrounded with naturalistic floriation, are the inscriptions,—"Length of days is in her right hand," "And in her left riches and honour." (Prov. iii. 16.)

Over "The Ark" are two stained-glass windows, representing tablets of stone surmounted with "glories," and having the Ten Commandments written thereon in Hebrew. Each side of these tablets has two geometrical stained-glass windows. Under these windows are marble panels, in which are emblazoned, in illuminated writing, prayers for the Queen and Royal Family.

From the centre of the chancel arch drops a cut-glass dish, in which floats "The Light of Memorial." This has been presented by a member of the family in memory of his deceased wife (one of Mr. Magnus's daughters), as is testified by an illuminated inscription which it bears. On each side of the apse stands a candelabrum of five gas-lights.

The sanctuary is paved with Minton's choice tesselated encaustic paving, having polished marble borders.

In the centre of the nave is placed the reading-desk, from the platform of which the minister intones the prayers. It is approached from the floor of the synagogue by flights of steps on each side, and is inclosed by iron railings, picked out in blue and gold. At each salient point is positioned a pedestal in which are elevated brass pillar gas-standards.

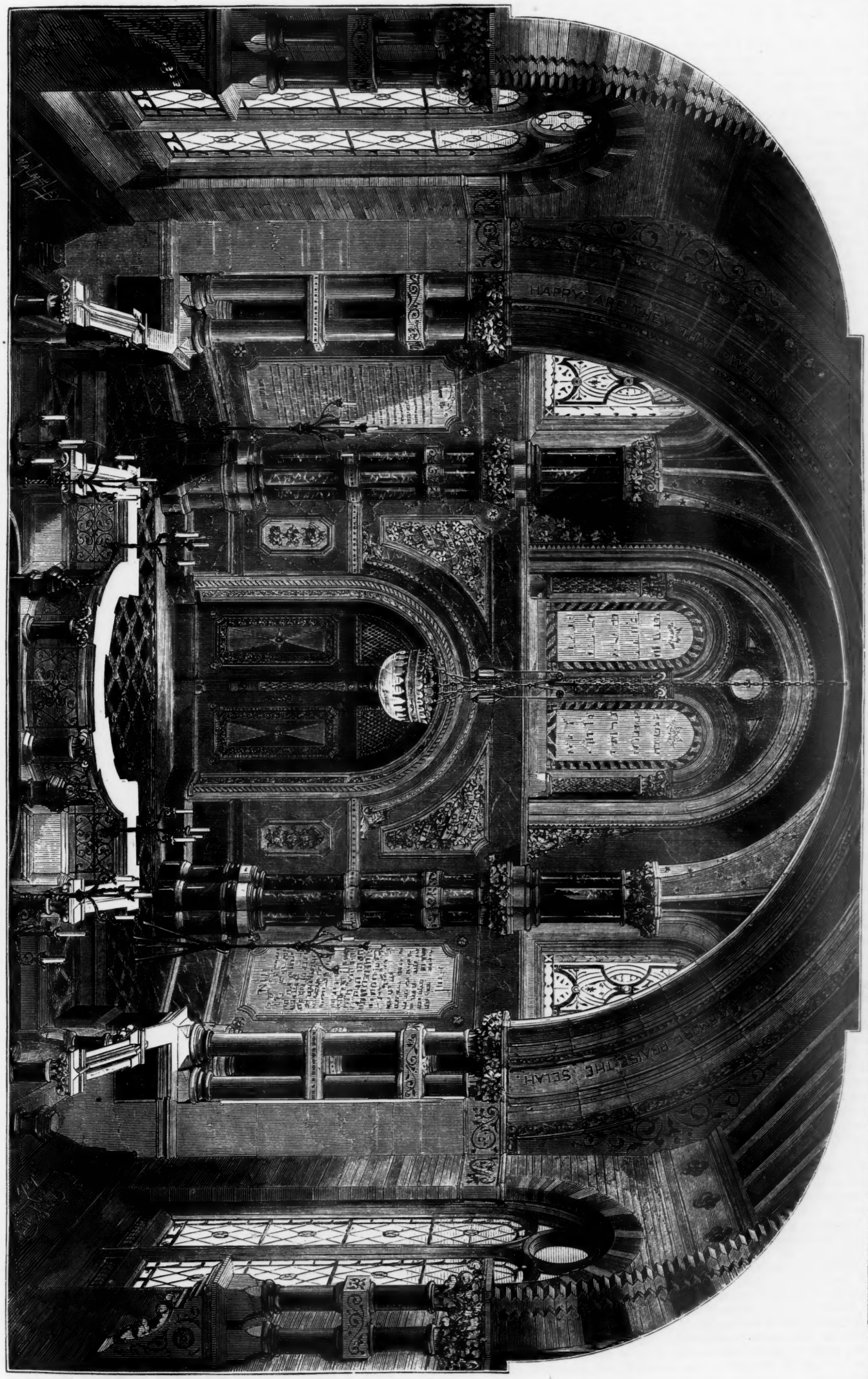
The pewing is arranged on each side of the reading-desk facing the sanctuary, except certain seats reserved for the founder and the wardens of the synagogue, which are disposed on each side of the chancel arch. Each seat is designed to turn up against the back of the same, so as to permit the congregation to stand during certain portions of the services; and each is furnished with a desk and foot-board.

Approached from the entrance-hall by the stone staircase before mentioned, having retiring-rooms, is the ladies' gallery, which, with its vestibule, is situated at the west end of the building, and faces the sanctuary.

The creed of the Jewish faith forbids the delineation of the human form, and the ornamentation has therefore been designed from natural foliage, conventionally treated, and arranged in geometrical combination. The carving has been studied from the plants mentioned in the Bible, and positioned so as to typify the several objects and uses for which the various portions of the building are devoted. Scattered about are to be noticed the lotus, vine, palm, olive, lily, pomegranate, wheat-ear, bulrush, &c. The construction and decoration throughout have been an effort to symbolise the character of the departed to whose memory the structure has been raised.

The architect is Mr. H. H. Collins, of London; the builder is Mr. Alderman Naylar, of Rochester; the gasfittings are by Messrs. Defries, of London, except the gas standards on the sanctuary, which are by Messrs. Brawn, of Birmingham; the ironwork is by Messrs. Jones & Blackstone, of London, and Messrs. Peard & Jackson, of London; the heating, hot water, and gasfitting are by Messrs. Spencelayh & Archer, of Chatham; the stone carving is by Messrs. Caudy & Gibbs, of London; and the decorative work is by Mr. John Durling, of Chatham.

The building is arranged to accommodate 150 persons on the ground floor, and has cost, exclusive of the site, about 6,000*l*. The stained glass windows were executed by Messrs. Smith & Miers, Cumberland Market, London; the upholstery was furnished by Messrs. Dawson & Son, of Rochester.



CHATHAM MEMORIAL SYNAGOGUE.—MR. H. H. COLLINS, ARCHITECT.

CASTLE NORTHWICH.

FOR a considerable period this increasing township has been suffering from a deficient water-supply. The question of constructing water-works has long been before the sewage committee, but it was not until after the drought of 1868 that decisive measures were taken in the matter.

In the early part of the year 1869 a survey of the township and plans were prepared for a water-works scheme, which, having been submitted to the Secretary of State for the Home Department, he gave his assent to the committee raising a loan on the security of the rates to carry out the works.

The principal works are erected near Moss-hill Farm, and consist of a well 6 ft. in diameter, which has been sunk to a depth of 32 ft., and indicates every appearance of yielding an ample supply of pure water.

In the engine-house, which has been built over the well, is a high-pressure horizontal engine, which lifts the water into a water-tower built on the high ground near the Winnington Branch Railway, the lift being 115 ft. The tower is circular, and 48 ft. in height. On the top is a wrought iron tank, 25 ft. in diameter and 10 ft. 6 in. in depth, and containing, when full, 32,000 gallons of water, or an estimated supply of a day and a half.

A road has been made from the engine and boiler-house to the tower, under which the supply-pipe is laid. The principal main from the tower is laid along Castle-street. The pipes from opposite Waterloo-road take a circuitous course along Navigation-road, Sandy-lane, St. James-road, and Waterloo-road: by this arrangement water can be passed in either direction, and it will prevent the lower district being totally without a supply in case of an accident. On the high portion of the township the pressure on the mains will be 45 ft., and on the lower 100 ft. Hydrants have been fixed on the mains opposite the principal property in the district, which will enable the committee to make arrangements for a fire brigade.

The contractors for the several works were Mr. C. Shaw, of Castle, for the erection of the tower, engine, and boiler house and chimney; Messrs. Milburn & Sons, of Staleybridge, for cast-iron pipes and tank; Mr. E. Sharp, of Lancaster, for valves and hydrants; Mr. J. Rutton, of Elland, for laying pipes; and Messrs. Holford & Shepherd, of Hyde, for the engine and boiler. The works were designed and carried out by Mr. Henry Bancroft, civil engineer, of Manchester.

ANCIENT EARTHWORKS AND ROUND PITS.

DURING the annual excursion of the Somerset Archæological Society, they visited Cadbury Camp. The Lord Bishop of Bath and Wells, with Lady Hervey, the Rev. Prebendary Scarth, and a large party, were present.

The centre of the camp is a lofty elevated plateau, above 30 acres in extent, and having a radius of view, it is said, of 30 miles.

The Bishop observed that of course the object of the ancient occupants was to take advantage of the natural formation of the ground, and to increase its defences as much as possible. At present, however, the beauty of the view, his lordship added, almost eclipsed its archæological interest. His lordship welcomed Mr. Scarth as one whom they were all glad to see present to enlighten them.

Prebendary Scarth replied to his lordship that the history of the "camp" went so far back into ancient times that it was almost impossible to say anything of it except by conjecture. The party having seated themselves around the edge of a hollow—forming a natural amphitheatre, the Rev. Prebendary stood in the midst, and remarked that the subject was one which was full of interest, but which it was very difficult to say anything certain about. He thought that all he could say, after examining this camp, and looking round the fortifications of the encampment, with the other camps of a similar kind in this country, but more especially in South Wales, and all that line of country which was occupied by the Britons previous to the Roman conquest, when Caractacus so nobly defended his country,—having himself examined those defences, he was inclined to think that everything showed this to have been an ancient British earthwork; and he thought the remains found within it tended to confirm that opinion. The chief features of this were the very strong ramparts with which it was surrounded, and more especially the entrances. The entrances were particularly curious from the way in which they were fortified, showing that they were of particular importance. He knew of no camp which showed the entrance so well defined as this, except that wonderful work, Maiden Castle, near Dorchester, which was one of the noblest and most wonderful works that existed in this country. He thought the earthwork they were now examining was only second to that. It did not appear to have had any Roman camp within it, as was sometimes found. There was a Roman camp within the British fortification at Clifton, for example. Again, the construction of the ramparts here, so far as he had been able to examine them, was very different from what they found at Clifton, where there was an inner core composed of lime and stone, a mass which could not be cut through. At the Society's meeting last year he had the opportunity of saying something on the camps at Clifton Down, and on each side of the Avon. Their ramparts were a solid mass of concrete, and that led us to suppose that the Romans must have had a hand in the formation of two of those camps at least. Here there was nothing of the kind; the ramparts were composed of lias stones and earth—the simplest kind of ramparts; the sort you would find at Maiden Castle. Then this did not lie at all in the line of a Roman road, so far as he could make out. It lay a considerable distance from the great fosse road, and also the road which ran along the top of the Mendip Hills; and although there might have been viscinal roads near it, it did not appear to have been a main point of occupation in Roman times. That was another confirmation of the opinion that it was an ancient British fortress. He thought on examining the ancient British fortresses they would find that the earlier ones were really the stronger. The indications we had of the way the Britons fortified themselves in ancient times showed that they were by no means an unskilled people. He thought we very much depreciated their condition at the time they were conquered by the Romans. He thought the very fact that a chief like Caractacus could stand against the whole Roman force seven years, and could for that time defend himself, showed that our ancient British forefathers were a people not at all to be despised. One point it was necessary to clear up. He did not know if there was a spring to be found within this camp—(a voice: "Yes; three springs")—there might be; but the truth was these great fortresses were not long occupied. They were only occupied in times of great national danger, when the cattle were driven in, and when perhaps the inhabitants of the whole district took refuge. It would have required a very large force to have besieged a camp of those times; and he did not think they were long held as places of permanent occupation, but only for temporary refuge. That belief was suggested to him by an inspection of Maiden Castle; and he saw points of resemblance in the New Zealand "pahs." He wished he could have thrown more light upon the camp.

Mr. W. A. Jones said Mr. Scarth would allow him to supplement the interesting observations which he had made by reminding them of what was said by their late secretary, Mr. Ward, who was one of the best authorities we had ever had in this county on earthworks. In the proceedings of the Society he described three types of earthworks, and he placed this amongst the kind which was only occupied in time of war. This camp differed from others in the absence of cattle inclosures. In most of the earthworks which we had in Somerset, and there were many of them, it was very clear that there was a portion which was occupied in time of war, and which corresponded to our keep. Then there was another inclosure fortified, but not to the same extent, and which would be fortified by the inhabitants of the district, who would come there probably as a permanent settlement. And beyond that they would have the cattle inclosure. Of course, at the time they were occupied, the ramparts of these mounds here were much sharper and steeper than they were now and were no doubt surrounded by wooden palings, which would render them still more difficult of access.

Rev. W. Barnes, who was next called upon, wished to speak a few words upon a discovery which had been made at Maiden Castle, inasmuch as he believed that discovery might give hints for other such discoveries in such strongholds as this and others. Some time ago the farmer who held the land was trying to make a sheep-pond at the top of the hill, *i.e.*, in the outer camp, the one we might assume to be the cattle camp; and within the space of a square sheep-pond he found no less than seven round pits: very round, very clearly cut, and about the size of wells, and from 4 ft. to 7 ft. deep. All of them were filled with a very black, loose, fatty earth, and that earth was found to be mainly of animal and vegetable substances. In the earth were found many interesting objects,—pieces of pottery; one of the stones of a quern; many bones, especially bones of reindeer; those bones showing at the same time what their animal food was in those days. Among the things found in one of those pits was a comb, which, it was shown, could not have been Roman, but belonged to a very early time. It was made of a flat bone—a sheep's, he believed—ground down, and the teeth were cut in the end, not in the side of it. Well, he believed that if the turf were taken off there would be found scores, if not hundreds, of those pits, for they were close together. He was opinion that the pits were made at various times. He had seen one instance where a pit was begun to be excavated, and evidently abandoned because it cut into the circle of another, which was an older pit, but still not so old that they could think fit to dig into it. He made those notes because he dared say they might readily find such pits here, and he hoped it would be tried. It was only to take an iron bar and try over the ground.

The Bishop inquired what Mr. Barnes thought those pits were for?

Mr. Barnes: Refuse-pits.

The Bishop: Not dwellings?

Mr. Barnes: By no means.

The Bishop: But that was one of the common forms of the earliest dwellings—pits where the circles touched one another, and I suppose were covered over with branches. Is that not the earliest acknowledged form of British dwellings?

Canon Meade mentioned Pen Pits, and another gentleman referred to those at Worle.

Mr. Barnes was understood to answer that there certainly were anciently house-pits with coverings over them; but that could not have been the case with those at Maiden Castle, because those pits were round and smooth, and there was no trace of a foot having gone into them.

Mr. Warren asked would they not have been very small?

Mr. Barnes said they ranged from the size of a small well to those of a larger size.

Mr. Warren should think they were rather small for refuse-pits.

Mr. Barnes said they were filled with what was no doubt animal and vegetable matter; and the farmer found it extraordinarily productive when applied as manure. Proceeding to offer a few notes on the "stone age," the rev. speaker said it so happened that speech tallied with history in so many points, and that our history as well as the Celtic speech ran back to the stone age. Now, we had the word "fint" and the word "chisel"; both those words belonged to the stone age, and expressed a solid Saxon image. Thus, the Teutonic word for arrow was *flean* (flies), and *et* was a diminutive added, making *fleanet*, or flint; therefore flint meant arrow. Chesil—such as the Chesil Beach near Weymouth—meant hard stone, pebble, or flint; therefore, that word was used when a chisel, or *ceosel*, was of stone. The word "hammer" meant a hard knob, a stone. These words, and many others he might mention, went back to the stone age, and were proofs of the Celtic age of our race.

Mr. E. T. Stevens followed with some remarks on the pits on Maiden Castle. Within the last week he had been negotiating for the purchase of those specimens found there. He would mention that he had particularly stipulated that if there should be any local museum or collector, he would waive all claim. He had lately examined, in the neighbourhood of Salisbury, a great many of those pits; and he had found remains almost identical with those which occurred at Maiden Newton. He had found three combs; and, if indications of workmanship, and also slight indications of shape, had anything to do with it, they would belong to three periods. Mr. Stevens gave a detailed description of the specimens, and also referred to discoveries at

another place near Salisbury, and in the Hebrides, and at "Grimes's Grave," Norfolk. He enlarged at some length upon the interesting evidences of ancient excavations for flints and chalk. The pits at Salisbury were clearly not of that form. He would give them a brief statement of the means by which those discoveries had been made. The ground was trenched for garden purposes, and they found all over the field that black patches occurred. His (Mr. Stevens's) idea was that they had been burning weeds there. The owner cut into the black earth, and he was not satisfied with that explanation. He went to work, and found himself in a chamber of a beehive shape, not at all of the straight sides which were found at Maiden Castle and elsewhere. It was a chamber of earth, about 6 ft. in height and 8 ft. in diameter. He not only found that, but, on working out one corner, he worked into a second, a third, and a fourth chamber of similar shape, and all communicating with each other; and there was likewise a semi-recess, with what object he was not prepared to say. Recently, when it was thought desirable to establish other waterworks in the neighbourhood of Salisbury, they found that the aperture was about 2 ft. 6 in. at the upper portion; it was enlarged downwards, and then swelled out into the chamber, and that was the invariable way in which the approach to these pits was made. Found in those pits were articles the same as they always rendered. There were a bone of *bos longifrons* worked into a hook, a bone ring, bone combs, a bone needle; very few flint tools; pottery, all hand-made, and the ornamentation of which was of a very peculiar and singular character. But while they found until a recent date, no evidence of an iron implement, all the flint tools that they found had been flaked by means of iron implements; and there were rust-marks upon them in almost every case. Mr. Stevens went on to speak of trenches which had been found around some of the pits, containing specimens of Roman pottery.

The President (Sir William Medlycott) said he would mention that through the kindness of Colonel Bennett, the proprietor of this hill, he had received a little pamphlet giving the history of North and South Cadbury, and which contained some very interesting points.

Descending to the main entrance, the party viewed the different lines of defence, and then, at the call of the secretary's whistle, accomplished the healthful exercise of re-ascending the hill.

Mr. Scarth pointed out how very strongly the entrance to the camp was protected. There were eight mounds or ridges, each with a ditch between them; and the road in was curved, so that the attacking force might be taken in flank. Of course, had that camp been well garrisoned it would have been almost impossible for any force to have taken it.

DECORATION OF ST. PAUL'S.

SIR,—In your number of the *Builder* for August 6th, in a letter signed "T. L. D." relating to "Colour and Architecture," it is stated, a "full argument upon the subject is now of the greatest consequence, as so large a sum as a quarter of a million has been suggested to be expended upon St. Paul's Cathedral, London." I quietly acquiesced in the matter; but as further comments have since been made in reference to the letter, I offer the following remarks:—

I quite agree no attempt should be made to make it "vie with the drawing-room or the theatre." I have seen in many churches a painful effect produced by too vivid colouring; in others I have seen the richest colouring in connexion with carving and gold look soft, unobtrusive, and beautiful. I have seen the simplest earth colours only used in ornamentation, but in such quantity and variety of design, it has been distressing; and I have also seen the whole surface decoration of a church in grey and stone-colour, slightly ornamented with black and red, and the effect has been excellent. It is the correct taste displayed in the selection of ornament and in the combination of colour that produces proper effect.

In all cases the style should be in accordance with the building, relative to its size and proportions, the quantity of light, whether natural or admitted through stained windows, and consistent with the worship offered. If it is where Roman Catholic worship is used, it may be as imaginative, suggestive, and devotional as it can possibly be; but if only used for ordinary preaching services, it would be absurd to introduce anything bright, suggestive, or varied in form which may take off the attention from the speaker.

It is remarked, "All the glorious effects produced by a flood of sunshine on the rich series of mouldings that clothe and charm the pier arches of our English cathedrals are irremediably lost the moment they are painted." I certainly think it depends upon how they are painted. The most glorious arch ever seen is the rainbow; but if it was simply stone-colour, I cannot imagine any flood of sunshine producing such gorgeous effect as the all-wise Creator's combination of the most vivid prismatic colouring does in that suggestive object of universal admiration.

In England a great part of the year there is a great dearth of such floods of sunshine. Much of the effect of stone carvings and mouldings is due to the accumulation of dust, dirt, and cobwebs, which, to the disgrace of the proper authorities, are allowed to remain year after year. Age is honourable, and to be looked upon with respect; but what a difference between looking upon an old man in rags, with unwashed face and uncombed hair, and seeing a well-dressed old man with pink face and white hair.

Our hearty thanks are due to those gentlemen who have brought forward the idea of decorating St. Paul's; and, as much interest has been awakened in the matter, I would suggest that search be made for all the papers, plans, designs, and correspondence of Sir Christopher Wren upon the subject by advertisement in the most public manner, and careful collection by those appointed; and, from what may be gathered, designs may be prepared by competent persons, and publicly exhibited, with specimen of the finished style of work in the same manner the cartoons were at Westminster Hall, that opportunity may be given, to persons who are solicited to subscribe liberally, of seeing the style and effect of what is intended to be done; and I hope, with Mr. E. L. Cutts (your correspondent), it may spread the fashion of completing our public buildings and create a school of artists capable of doing it worthily.

WILLIAM PITMAN.

ARBITRATION CASE AT SWINTON.

AN important case of arbitration has been heard at the Station Hotel, Swinton. Some time ago Messrs. Wilson, Tillotson, & Sykes, proprietors of the South Yorkshire Glass Bottle Company, at Swinton, commenced to build a wall round an exposed part of their works. All went satisfactorily until they enclosed a watercourse at the bottom end of their premises, which watercourse separates their property from that of Messrs. Windham & Sons, who objected to the Glass Company enclosing the watercourse, as it belonged to them (Messrs. Windham). The Glass Company, however, asserted their right to it, and continued to build. Messrs. Windham & Son accordingly instructed their workmen to pull the structure down, which they did. A serious altercation was the consequence, and it ended in legal proceedings being commenced by the Glass Bottle Company. The case was to have been tried at the Leeds Assizes; but, by the advice of counsel, it was referred to arbitration; and the case came on as previously stated. Mr. J. E. Barker, of Sheffield, was chosen arbitrator. Evidence was given, and the arbitrator and the counsel went over the property in dispute, and made a careful examination of the same. No adjudication was made.

SASHES.

SIR,—I read in your impression of last week a very interesting account of New St. Thomas's Hospital, by a working man. With regard to the latter portion of his letter, anent the hanging of sashes, I am rather curious to know what system he would adopt to obviate the several inconveniences attached to the present mode. I have made a great many window-frames and sashes myself on the balance-weight principle; but the idea often recurred to my mind that the sashes could be suspended simply by the elastic pressure of tongue-shaped springs applied laterally. This method would, I believe, secure the perfect working of the sash. It would cause it to travel smoothly and evenly, and never allow it to shake or rattle in the wind.

G. L.

ON FORCE AND MOTION.

SIR,—It is said to be a law of nature that all bodies have such an indifference to rest or motion, that if once at rest they must remain eternally so, unless acted upon by some power sufficient to move them. This is undoubtedly true; but that a body, once put in motion, will proceed of itself *ever* after in a straight line, if not diverted out of this course by some other influence, is, I think, a philosophical error. The generally received opinion founded upon this theory, that a cannon-ball discharged in vacuum, and not influenced by gravitation, would move for *ever*, I believe to be an error also, for the following reasons. The distance a cannon-ball is propelled through the atmosphere depends principally upon its shape and the force of gunpowder used; it is therefore probable that a cannon-ball might as easily be projected one hundred miles as one mile, if a commensurate force were employed. The same principle will apply to vacuum.

Seeing that matter cannot move without a moving cause, there can therefore be no motion without force, and that force must be continuous and infinite in order to produce continuous and infinite motion; so that however much greater distance a ball would travel in vacuum (compared with a resisting medium), its speed must gradually lessen and its motion eventually cease. The question may here arise, what is there to cause the ball to stop? I answer, the force being finite it is evident the distance traversed must be finite also, otherwise we are supposing an effect without a cause. With all due deference to scientific men, I believe the "cannon-ball theory," as I may term it, a complete fallacy.

J. KIPLING.

CASES UNDER METROPOLITAN BUILDING ACT.

FEES.

AT the Lambeth Police Court, Mr. Abraham Cohen, builder, of Southgate-road North, appeared to a summons for refusing to pay 2*l.* 1*s.* 3*d.*, due to Mr. Cæsar Alexander Long, the district surveyor for the district of St. Mary, Newington, and part of Lambeth.

Mr. Long said he surveyed the alterations made to the Jewish Synagogue, Walworth-road; but although he sent several times to defendant, he refused to pay the amount of fees.

Defendant said there had really been no additions or alterations to the building within the meaning of the Act. Before the building was completed it was found that the roof was too heavy, and caused the walls to bulge. In consequence, three buttresses were built. Those matters were, he contended, necessary repairs, and did not entitle the surveyor to the fees.

The magistrate said, according to defendant's own version it was clearly an alteration to the building, and not a repair, as meant by section 9 of the Act.

The surveyor said that section referred to necessary repairs, and nothing affecting external or party walls. The roof was found to be not sufficiently strong, and extra supports had to be put in. The walls bulged so dangerously that brick buttresses were obliged to be erected, and iron rods inserted to tie the work together.

The magistrate said it was quite clear the case for the complainant had been made out, and he should make the order for payment of the amount, with 2*s.* costs.

THE ROUND TOWERS OF EAST ANGLIA.

IN your review of Mr. Waring's work on "Stone Monuments," &c., you state, probably quoting from his book, that "there are about fifty round towers in Suffolk and Norfolk." Allow me to say that there are in these two counties nearly, if not quite, 170 round towers.

Not wishing to incumber your pages with the names of the whole of them, I may refer your readers to the *Journal of the British Archæological Association*, vol. xxi., p. 163, where 165 are mentioned, and this is an imperfect list.

Quoting, I still presume, from Mr. Waring, you say that the round towers in the Eastern Counties are but "a continuation, with adaptation, of the Irish idea in England."

To this I must demur; and I think Mr. Gordon Hills, who has examined, illustrated, and written upon the Irish Round Towers, will do the same. They are, in my opinion, of different date, and arise from different circumstances. The Irish round towers were probably of Christian origin, although of very early date; whilst those in East Anglia were certainly erected between the twelfth and fourteenth centuries.

The reason why the last were built circular is, to my idea, obvious. It was to save angles of freestone, a material not to be obtained, except by importation, in the eastern counties. All naves and chancels in Norfolk and Suffolk built with round towers have scarcely any, and, in most cases, no freestone quoins to the internal angles of the windows, doors, arches, &c., but are simply finished in rubble and plaster. In Ireland, however, the case was different; for there was an abundance of good building stone, and it is necessary to find some other reason for building towers in that form in that country.

R. M. PHIPSON.

MAN THE BOATS.

SIR,—The loss of life so frequently occurring in the lowering of boats at sea should induce inventive aid from all quarters, to lessen the danger attending when that duty has to be performed in bad weather.

It would appear that there are five objects desirable to be achieved, viz.:—

1. That it shall be impossible that the falls shall foul, either by becoming twisted or by the boat swinging round and causing the falls to foul each other.

2. That the man in the boat shall be able to lower it, having both the falls under his perfect command.

3. That he shall be able to cast off the falls momentarily, and, if necessary, simultaneously; and that they shall not become cast off until the boat has taken the water, nor one before the other, without his intention.

4. That the same falls shall be worked with facility from the poop or quarter-deck when re-hoisting the boat.

5. That the apparatus for achieving all this shall be readily understood, and not liable to get out of working order.

In the first place it would be advisable that the upper block shall be part of the davit, so that it cannot turn about of itself; so that when lowering the boat its sheaves shall be in an athwartship direction, which will give the opportunity to haul on the falls from the deck, which fulfils our fourth requirement.

It would next be advisable that the foremost and aftermost thwarts should be temporarily (to allow the boat to be washed out), but for the time securely fixed, and which could be so managed that it would be impossible to forget it and leave them unfixed (and to thereby cause an accident in lowering or hoisting the boat), by having between two of the knees of the boat an iron catch with a nose like a latch-bolt, which the end of the thwart must pass before it could be secured; and the iron catch should work on a pivot, and have a long iron arm attached to, or rather being part of it, which should, by means of a powerful spring or weight inseparable from it, remain pointing up in the way until such time as the thwart had been secured.

Then, having the thwart secured, we now

require that it shall be strong enough to bear the weight of the boat and man; then we require a block without a strap, but having a very substantial shell made of elm or iron to be attached to the thwart, so that it cannot turn about, but must remain athwart-ships to the boat; this may be managed by having the shell of the block of a square form, and by an axle being passed through it so that a pair of nippers at each end of the block can attach it to the thwart (properly prepared to receive them by having iron staples fixed underneath it), these nippers to work very much on the principle that those belonging to the monkey of a pile engine work, but in this case it would perhaps be advisable that they should not release themselves, but that they should require a pin to be drawn out (upwards, so that it could not fall out of itself), in order to let go the tackle.

Then the upper and lower blocks cannot turn nor allow the tackle to twist, which realises the first part of requirement No. 1.

If at about the boat's length apart two eye-bolts be screwed in a strake at the light water line, and, of course, in each case, into a futtock, and a couple of similar bolts were screwed (perpendicular to the former ones) through the berthing into the stanchions, and if a rope* were attached to each perpendicular pair of these, and strained moderately taut, then, if we have previously passed a good-sized and strong galvanised ring over this rope, and the same to the other, then, having to each ring a guide (or guy) rope spliced, and the end of each guy made fast, one to a ring in one end of one of the lower blocks of the falls with two half-hitches, this will effectually fulfil the other part of requirement No. 1.

With respect to requirement No. 2, this may, perhaps, be effected by Mr. Cooper's apparatus (I do not know exactly what it is), but it could be effected by the following method:—Both the falls having first been rove through (what I shall call) a double tube of, say, galvanised iron (this tube being similar in appearance to that of an opera-glass), then, having the falls conveniently placed in coils in the boat, the man, in lowering, can pay them out at pleasure.

One of the tubes of this double tape could be made to lock and unlock with a spring catch, so that it could permanently remain on the other fall, by having some contrivance (a hole in it and a small line to clove-hitch it to the fall) to that end.

In No. 3, we have not yet seen how to cast off the tackles simultaneously. This could be done by having a very small single block attached to each fall, at perhaps a foot from the lower end of each, and on that part of the tackle spliced to the lower block, and by having a couple of converging small lines rove through these small blocks, and their other ends attached to the vertical pins confining the nippers which attach the lower blocks to the thwarts, then pulling on these small lines will draw the pins and liberate the tackles simultaneously. The whole of the first four requirements are provided for, and care and judgment in carrying these out may show the fifth to be also accomplished; but I submit these suggestions, hoping that persons better informed than myself on seagoing experiences may indicate such improvements as may be possible, and cause the idea to be speedily put into execution.

HENRY AMBROSE.

ACCIDENTS.

Fall of a Building in Market-street, Manchester.—Some time ago the city surveyor condemned a block of old shops situate in Market-street, and lying between Palace-street and Marsden-square, on the ground that the buildings had become unsafe. In consequence of this, says the local *Courier*, Mr. Cheetham, the owner of the property, commenced to pull down the two central shops; but about a month ago, when the work was only half finished, a dispute occurred between him and the corporation. The result was that a large portion of the front walls was not pulled down, and remained standing, or rather leaning; and it required a strong nerve in those persons who beheld the threatening position of the walls to pass by them. On Monday morning the greater part of this mass of old brick and mortar fell, the *débris* completely covering the temporary wooden side-walk. Very fortunately no one was hurt. The remaining portion of the wall, which was left at an angle of 75 degrees, was pulled down in the course of the afternoon. It was also thought advisable to strengthen the shoring of one of the adjoining shops.

Fatal Accident at a Gentleman's House.—A shocking accident has taken place at Highbury-terrace. A man named William Lorragan, aged 35, was at work on a temporary scaffold, cleaning the paint of a well-staircase, when, from some cause at present unknown, he slipped off, and fell a distance of 30 ft. In the descent he came in contact with a gas-pipe. The skull was fractured, and he immediately expired.

COMPETITION.

Penrith Cemetery.—In reply to the advertisement in our columns, designs by twenty-six competitors were sent in, and the design marked "Labor et spes," being by Mr. J. P. Pritchett, of Darlington, has been selected.

CHURCH-BUILDING NEWS.

Longbridge Hays.—The foundation-stone of a new school church has been laid at Longbridge Hays, a hamlet on the slope of the hill near Bradwell Wood, in the parish of Wolstanton. The population of Longbridge Hays exceeds 500, and the group of houses now standing there has sprung up within the last few years. There is no place of worship or public school there. The building to be erected will seat 180, and accommodate 125 children for educational purposes. It will be 42 ft. by 20 ft., with a class-room, 16 ft. by 14 ft. Mr. Lewes, of Newcastle, is the architect, and Messrs. Bennett & Cooke, of Burslem, have contracted to do the work.

Brighton.—The memorial stone of the Countess of Huntingdon's Church, North-street, Brighton, on the site of the edifice recently pulled down, has been laid by Lord Shaftesbury.

Darlington.—The chief stone of a new church has been laid at the village of Middleton-One-Row. It will be a chapel of ease for the use of the Middleton parishioners. About 800*l.* have been obtained towards the 1,600*l.* which will be required. The church will be Early Decorated, and the architect is Mr. W. P. Pritchett, of Darlington.

Bridgnorth.—The cost of rebuilding the tower of St. Leonard's Church is likely to be considerably more than was at first calculated upon. In reply to tenders solicited from well-known building firms, the three following only have transmitted their estimates, viz., Messrs. Lovatt, Wolverhampton, 5,990*l.*; Messrs. Nevett, Ironbridge, 5,770*l.*; Messrs. Estcourt, Gloucester, 4,100*l.* This charge is exclusive of chimes, stained-glass window, architect's commission, the clerk of the works, or the expense of taking down the old tower, which is estimated to amount to between 700*l.* and 800*l.*; but there will be realised about 700*l.* for the application of the old stones in the completion of the undertaking, whichever estimate may be accepted. The original estimate was from 2,500*l.* to 3,000*l.*

Gunby St. Peter's.—A new church has been opened in this sequestered village, which lies near the Burgh station on the East Lincolnshire Railway. The old church, a plain, whitewashed building, was erected about 1634. This, after having undergone several alterations, was rapidly falling into decay, when, in 1868, Mr. Fowler, of Louth, furnished a design, which has been carried out at a cost of about 1,300*l.* The only objects of interest belonging to the old church which could be retained in the new were two brasses.

Oldham. — The foundation-stone of St. Andrew's Church was laid by the bishop of the diocese on the 20th ult. The plan comprises nave, 73 ft. by 29 ft., and 58 ft. high, with side aisles and transepts. The chancel will be 27 ft. by 22 ft., in which are the stalls for choir. The tower is at the east end, forming one of the principal entrances. It is in the Early English style of architecture. The exterior will be faced with red stocks, relieved with bands of different tints, and stone dressings to the several doors and windows. The roofs are of high pitch, with open framed principals, and covered with slates of varied tints, with enriched tiling. Accommodation will be provided for 638 persons, and the estimated cost is 3,300*l.* The contractor for the foundations is Mr. J. Robinson, jun., Hyde; and the architect, Mr. John Lowe, Manchester.

Huddersfield.—The new church of St. Andrew, at Lane, Leeds-road, has been consecrated. The edifice is rectangular in form, and comprises nave with north and south aisles, chancel with north chapel for school children, and south chapel for organ chamber and vestry. The porch is placed on the south side, and it is intended, at some future time, to erect a tower and spire, 135 ft. high, at the west end, the foundations for which are already in. The extreme length of the church, from east to west, is 92 ft.; the breadth, 55 ft.; and the height, to ridge of nave, 48 ft. The nave is 55 ft. long by 22 ft. wide inside dimensions, and the chancel 29 ft. 6 in. by 22 ft., and is divided from the nave by a pointed arch of lofty proportions supported in clustered shafts with carved caps. The nave is separated from the aisles by an arcade of two wide bays and a smaller one opposite the porch at the west end. The larger bays are 19 ft. wide, thus affording little or no obstruction to the view, having only one circular shaft on either side. The chancel is separated from the chapels by arcades partly filled in with open wood screens. The nave roof is constructed of hammer-beam trusses, with open traceried spandrels and moulded ribs in square panels which are filled in with plaster, forming a coved ceiling. The chancel roof is similar without the trusses, and with an addition of carved bosses at the intersection of ribs. The aisles and chapel roofs are open, and the whole of the woodwork is stained dark and varnished. The seats are open and drab stained and varnished, and the chancel stalls have open-traceried fronts and carved poppy-heads. The church stands upon an elevated site, and is Late Decorated in character, the windows throughout being enriched with tracery. The edifice is warmed with hot water from an apparatus under the vestry. The font and pulpit, which are intended as memorials, have been erected by Mr. Thomas Earp, of London, sculptor; and the carving throughout the church by Mr. Stevens, of Dewsbury. The west gable presents an unfinished appearance, pending the erection of the tower and spire. The architect was Mr. Wm. H. Crossland, of Leeds and London; clerk of the works, Mr. Jonathan Parsons; masons, Messrs. Thomas & George Rhodes; joiner, William Roberts; slaters, William Goodwin & Sons; plasterer, William Kitching; plumber, H. Garton; painter, George Brighouse. The church is intended to seat 500 persons, and the estimated cost, including boundary walls, was about 4,300*l.*

King's Norton.—A public meeting of the parishioners of King's Norton has been held, for the purpose of receiving a report from the committee appointed at the Easter vestry to consider the present state of the church. The vicar presided, and read extracts from the report of Mr. Hopkins, of Worcester, architect, in reference to the repairs necessary. These were embodied in the report of the committee, which was read. It stated that the architect recommends a thorough restoration of the whole fabric of the tower and spire, including the removal of all decayed stones, and the substitution of fresh ones; and urges the undertaking the repairs, which he considers necessary, without delay. The committee strongly recommend the acting on the architect's suggestions. The cost of this portion of the work he estimates at about 500*l.* They consider that the particulars of the restoration specified by the architect, viz.,—new roof for the nave and aisles (the present woodwork being used up for the latter), the rebuilding of the north wall, the setting upright the pillars and arches of this aisle, the removal of the vestry, and the restoration of the parapet on both sides,—should not exceed in cost 2,000*l.*, making, with the sums required for the tower and spire, a total of 2,500*l.* The report was approved of, and a committee appointed to carry out the objects of the meeting. The sum of 1,280*l.*,—about half the required amount,—has been subscribed.

Buckhurst-hill.—St. John's Church has been reopened for divine service. The church as it now stands, consists of two aisles, nave, and chancel. It is of Geometrical Gothic style, the material used being Kentish rag stone, with Bath stone dressings and windows. The new aisle affords additional accommodation for about 150 persons.

Barmby-on-the-Marsh.—The corner-stone for the restoration of the chancel of St. Helen's

* Of Newall & Co.'s patent wire ropes, and which, as it would be liable to violent and sudden tugs by the boat when in a storm, should be 3 in. or 4 in. in circumference. These ropes do not run up when wet when once set tight, nor stretch like hempen ropes, and for this purpose they would be peculiarly applicable, as being unlikely to catch or impede an iron ring passing up or down them; but as sea-water has a tendency to soften iron, it would be advisable to occasionally inspect their lower ends.

Church has been laid. The work is to be done by Mr. Elliott, of Goole, according to plans prepared by Messrs. Hadfield & Son, of Sheffield, architects.

Bradford.—The contracts for the erection of the new church at Ripleyville have been let. This is the last of the ten churches as the result of the church-building movement begun at Bradford in 1860, and is to be a memorial church erected to the memory of the late Mr. Charles Hardy. A suitable site has been given by Mr. Ripley, and the sum of 1,000*l.* is required to complete the estimated outlay.

DISSENTING CHURCH BUILDING NEWS.

Burton.—The memorial foundation-stones of a new Wesleyan chapel, in Station-street, Burton-on-Trent, have been laid by Mr. M. A. Bass, M.P., and Mr. T. Hazlehurst, of Runcorn. The site of the proposed edifice is a plot of land opposite the Midland Hotel (750 yards in area), which the trustees some time ago purchased from the Marquis of Anglesey for 1,500*l.*; and the style of the chapel is to be Gothic of the Early Decorated period. The elevation to Station-street will have a large gable, pierced by a five-light window, below which there will be a canopied entrance. The tower and spire will together reach the height of 120 ft. to the top of the weather vane. The Union-street elevation will be broken up by four pointed gables, each of which will contain two-light windows, to give light to the body and galleries. The plan of the chapel is in form a parallelogram, being 60 ft. long on the ground floor, 84 ft. on the gallery, and 51 ft. in width. The main body will be divided into four bays by light iron columns, with moulded capitals, these columns being used to support the framed principals of the roof, which will be exposed and stained, and of somewhat elaborate construction, the spandrels being filled in with open tracery-work. The height to the top of the ridge will be 63 ft., and to the highest point of the ceiling line 46 ft. 6 in. The accommodation provided will be for 860 adults. The materials used in the erection will be pressed brick facings, with Bath stone dressings to doors, windows, quoins, plinths, &c. The spire will be slated in bands of two colours. The design is that of Mr. Edward Holmes, of Birmingham and Burton, architect; and the work let to Mr. Lilley, of Measham, and Mr. D. Bassett, of Burton, for 3,365*l.*

Dudley.—A new Wesleyan Chapel has been opened here for divine service. The façade of the chapel is broken by the introduction of three wide arches, forming the front of an open portico, supported on carved caps and moulded columns. A large wheel window forms the chief feature of the centre gable. The front is flanked on the one side by a tower and steep slated spire, and on the other by a continuation of the principal front. The façade is further broken up by means of buttresses, and flat buttresses relieve the plainness of the sides. The chapel is built of red brick, relieved by Bath stone dressings. The total cost has been 3,000*l.*

Melton Moubray.—The architect and building committee of a new Wesleyan chapel here have met, for the purpose of receiving tenders for the erection of the proposed building. They were seven in number, and the lowest was considerably more than was expected. Mr. Herbert, of Leicester, 3,015*l.*, less 250*l.* for the material of the old chapel; Mr. Wileman, of Burton, 2,750*l.* net; Mr. Barnes, Melton, 2,699*l.*, less 200*l.* for old material; Mr. Fast, Melton, 2,577*l.*, less 309*l.* for old material; Mr. Perkins, of Leicester, 2,556*l.*, less 246*l.* for all material; Messrs. Stevenson & Weston, of Nottingham, 2,510*l.*, less 156*l.* 10*s.* for old materials; Mr. Robert Weaver, of Melton, 2,490*l.* 15*s.*, less 260*l.* 10*s.* for old materials; Mr. Winkles, of Leicester, 2,300*l.*, less 300*l.* for old materials. The lowest tender, that of Mr. Winkles, of Leicester, was accepted, and the old chapel was to be vacated and placed in the contractor's hands by the 23rd inst.

Hull.—The foundation-stone of a new Wesleyan chapel, of large dimensions, has been laid here. The situation chosen as the site of the edifice is in the fast-increasing district round Coltman-street. The architect is Mr. Botterill. The edifice will be 90 ft. in length, by 47 ft. in width, in the Decorated Gothic style.

Lightcliffe.—The foundation-stones of a new Congregational church, and a minister's house, at Lightcliffe, have been laid by Miss Helen and Miss Ada Salt. The site of the new buildings is on a piece of ground near the old chapel, and on the Whitehall-road. The new church has been designed by Messrs. Lockwood & Mawson, architects, Bradford. The edifice is in the Geometric Gothic style, and is to consist of a nave, side aisles, transepts, and an organ-chapel. At the western end of the nave there is to be a gallery for the school children, and at the eastern end there are to be erected convenient minister's, deacons', and ladies' vestries. On the south-west angle of the building a tower and spire are to be erected, which together will rise to a height of 151 ft., and under which will be one of the principal entrances to the church. At the south-east corner access is to be provided by a covered porch and centre vestibules. The greatest internal length of the church is to be 87 ft., the width across the nave 50 ft., and across the transept 66 ft. It will afford accommodation to 500 adults and seventy children. At the west end the nave is to be lighted by five-light traceried windows of two orders, the mullions having moulded shafts and carved capitals and bases. At each transept is a large four-light traceried window of one order. The aisles are to be lighted by two-light traceried windows. The western gable has pinnacles, crocketed gable copings, and is surmounted by a foliated cross rising to a height of 55 ft. The belfry-stage of the tower has deeply moulded and recessed tracery windows of two lights on each face, and filled in with ornamental cut slate louvres. The junction of the tower and spire will present a pierced battlement, octagonal angle pinnacles, pyramidal shelvings, and lucerne lights. The whole of the exterior walling is to be constructed of local delf-stone, with ashlar dressings to the jambs, plinths, and buttress shelvings, and each front of the building will correspond in its architecture with the principal façade. Internally, the nave will be divided from the aisles by polished columns of Shap granite, resting on moulded stone bases and supporting carved capitals, from which will spring moulded ashlar arches. The transept and organ-chapel arches are to be of moulded ashlar work also, and they will spring from detached cylinders of Robin Hood stone, supported on carved and moulded stone corbels. The interior dressings of the windows are to be of ashlar work, all bosted. The clear-story will be lofty, and lighted by ten single-light windows on each side. The roofs are to be of open timber construction, with dressed framings and spars, and throughout they will have a space between the slates and the ceilings, and will also be covered with felt, so as to preserve an equal temperature winter and summer. The seats are to be of red deal, painted and varnished. The pulpit, lectern, and choir seats will correspond. The heating and ventilating arrangements are to be executed by Messrs. Haden, of Trowbridge. The minister's house is to be erected on the upper portion of the site, and will be of a style to correspond with the church. The cost of building the church and house will be about 6,500*l.*

Reading.—The foundation stone of a new school-chapel for the Wesleyans has been laid by Mr. J. T. Waterhouse, of Honolulu, Sandwich Islands. The site of the chapel is on a piece of land lately occupied by two cottages in Spring-gardens. The new chapel is designed to answer the joint purposes of religious services and Sunday-school. Mr. S. Whiting, of the Grove, is the builder; and the entire cost, including the site, will be about 490*l.* When built, the chapel will seat 200 persons.

FROM AUSTRALIA.

Melbourne.—So far had the new Town-hall advanced towards completion, that its formal inauguration, by latest news, had been fixed for the 9th of August; and the ceremonial was to be on a grand scale. It was proposed in the City Council to vote 2,000*l.*, in order to defray the expenses of the occasion, but Mr. Amess, the mayor, at once declared that not a shilling should be expended but what came out of his own pocket. A number of gentlemen have raised by subscription a handsome sum, for the purpose of presenting to him a gold mayoral chain. —— Vigorous steps are being taken to carry out the designs of the promoters of the Williamston School of Design. Materials and drawings have been purchased, and it is expected that a good start will be effected.

The Belfast Harbour Works.—The object of the works in Belfast Harbour is to preserve the force of the current over the shifting sand, by confining it between deeper walls till it reaches the deep water outside, making the current from the west act as a constant dredge, clearing a way for itself, and never requiring artificial aid to preserve its depth. Fortunately the material is as abundant and as near at hand as could be desired, the passage being lined with huge blue-stone boulders which are carried on trucks to the end of the wall, and thrown down on the sand, which they rapidly displace by their greater weight till they reach the solid ground beneath. As the walls are extended, not only is all the sand between them carried out by the current, and deposited on the beach at either side behind the walls, but a deep channel is formed a couple of hundred feet beyond them. It is consequently expected that the coasting vessels of lighter draught will be able to come up the river into Belfast before the walls reach the point where the surf breaks over the bar. The width between the walls at their base is 180 ft., and so great is the force of the current that the agents for the Western steamer have already had to get a steam-tug to tow up the lighters to the wharf. The north wall, which extends from the main land, is eighteen chains long, 12 ft. wide on top, with side slopes of 2 ft. to 1 ft., and contains 7,230 cubic yards of stone. The top of it is 7 ft. above low-water mark. The south wall is now twenty-seven chains long, but a great part of this length is extended back from the sea wall in order to form a tramway from the quarries. It is but 8 ft. wide on the top, and rises only 5 ft. above low-water mark, containing 5,750 cubic yards. The work was commenced on the 15th of January, 1869, by Messrs. Gibson, Brothers, for the Public Works Department. The large quantity of stone work required has cost 4,500*l.*, which is, we understand, unprecedentedly cheap. It is carried out under the superintendence of Mr. Bell, acting under the district inspector, Mr. Todd. The original plan of the work was given by Mr. Moriarty, the engineer for rivers and harbours to the New South Wales Government, and Mr. Wardell accepted Mr. Moriarty's plan, modifying it only after borings and observations of the currents, &c. The inhabitants of a great part of the Western district anticipate important advantages from this work in transmitting produce to Melbourne and otherwise.

Adelaide.—Captain Sherard Osborne has arrived in Adelaide as the representative of the British Australian Telegraph Company. The object of his visit is to effect arrangements with the South Australian Government in reference to the establishment of a telegraph station at Port Darwin, in the northern territory; and also of a land line from that point to Burke Town, on the Gulf of Carpentaria. The Government of South Australia have been considering whether a direct line from Port Darwin to Port Augusta, at the head of Spencer's Gulf, would not be a better means of communication than the route projected by the company. Another question has been raised—viz., Would it not be safer to bring the submarine cable direct from Galle to Western Australia, than take it round by the Straits of Singapore and Java, where it must be exposed to danger from the coral reefs which lie thick at the bottom of those seas.

Books Received.

A BUNDLE of books from Cassell & Co. is before us. We will take a paragraph or two from some of them. From "Illustrated Travels" we get some account of the Turkistan Museum at St. Petersburg:—"On a raised platform beside the door (where he is kept in countenance by two smaller specimens of the same breed) figures an enormous mountain-sheep, of the argali or 'big horn' species, with the short greyish hair of a chamois, and vast curled horns, more than 2 ft. long and as thick as a man's leg. This distinguished foreigner, however, though ranking first in the collection, is not from Turkistan, but from Siberia; as it were a true-born Russian subject placed as a sentinel over the foreign intruders. Farther on, appear two wide-winged vultures, lean and loathsome as the worst of their kind, fighting over the torn remnants of a hare,—a group which might suggest to the historian a struggle yet to be between Russia and Afghanistan over the carcass of prostrate Bokhara. Around the walls are ranged skulls and bones of strange animals hitherto unknown to Russia; tawny skins of the tiger and ocelot hanging peacefully beside those of the mountain

goat and deer; fish from the waters of the Tchirtchik, and birds from the slopes of the Thian-Shan. On the more distant tables appear bright-hued lizards and curious insects, minerals dug from the hills of Khodjend, and fossil shells entombed before the name of Russia was known." The "Household Guide" speaks thus as to "Painting Fans":—"The painting of paper fans differs from ordinary water-colour drawing, inasmuch as what is technically known as 'texture' cannot in the former be attained by the use of thick rough paper: the lightness and neatness essential to the fan demand that a thinner and finer paper should be used; and this should be made from linen rag, to enable it to bear repeated folding. The fact of this smooth paper being used renders desirable the employment of stippling rather than of washes, in the colouring. Where gold and silver are required, the painter may use the ordinary illuminating shell gold or silver; or, if he prefers gold or silver leaf, he may use, to fix it, a size composed of gum-arabic, sugar-candy, a small quantity of honey, melted in pure water, mixed with a little brandy, and applied with a camel-hair pencil. This preparation was long kept a profound secret by the fan-makers. When dry, burnishing may be accomplished by piling a number of mounts together, and pressing them." The "Popular Educator" gives us the following as to "Value of the Larch Tree:"—"It would be difficult to over-estimate the importance to be attached to the cultivation of this valuable tree in situations where little else could be grown. The Athol family have been celebrated for their zeal in the cause of larch growth. The extent to which their fir-tree cultivation has been carried on in Scotland will be best shown by a reference to the following statistics:—14,096,719 young larch trees were planted in the neighbourhood of Blair Athol and Dunkeld. The plantation covered a tract of land 10,324 imperial acres in extent. The trees flourished and grew rapidly, and on felling one, at the ninety-fifth year of its growth, it was found to be 100 ft. long, 10 ft. 6¼ in. in girth, at 5 ft. from the point at which it was cut through. It contained 368 cubic feet of timber. It has been truly said that the man who plants good trees abundantly stores up wealth for those who follow. An approximate calculation has been made as to the money value of the vast fir forests thus raised by one man's strong will and industry, and the sum arrived at is 6,500,000*l.* In addition to this princely sum we must estimate the thinnings and trimmings as being worth about 7*l.* per acre of forest. At the death of this noble pine-tree planter, a coffin was constructed from the wood of one of his forest favourites, which, on being felled, measured 106 ft. in length.'"——Messrs. W. H. & L. Collingridge, of the *City Press*, announce for publication, early in December, the "City Directory." According to the prospectus, all matters of interest to traders in, and connected with, the city of London, as well as banking, insurance, public companies, parochial and official, will be specially attended to.——Mr. James Hogg, the founder of *London Society*, and sole editor of the first seventeen volumes of that work, has just ceased to have any connexion with it. He is now about to start *English Society*, aided by those with whom he has been long associated. Colour printing will be applied in illustrating it.——Mr. Arthur Hill, A.R.I.B.A., of Cork, has announced his intention of shortly issuing lithographic drawings and photographs, with descriptive letterpress, illustrating the architecture and present condition of Ardfert Cathedral, county Kerry. Mr. Hill says he has two very interesting Celtic churches in hand that will be issued shortly after Ardfert Cathedral, viz., Kilmalkedar, near Dingle, and Temple-na-hoe at Ardfert.

Miscellanea.

Melton Mowbray Union Workhouse.—The new infirmary, which has been some time in course of erection, is now complete and occupied. The fever-wards are quite distinct, having separate airing-yards. The nurses' apartments, kitchen, and surgery are in the centre of the building, and in direct communication with both male and female wards. Other extensive alterations have also been made in connexion with the children's wards. The works have been carried out by Mr. J. Fast, builder, from the designs and under the superintendence of Mr. R. W. Johnson, architect, both of Melton Mowbray.

Geography for the Volunteers. — Commenting on the impulse given by the War to the study of geography, and the superior acquirements in this direction by the German soldier over the French, the *Publisher's Circular* says,—"Can we not extract honey out of the carcass of this lion? The educated German soldier, drawn not exclusively from the poor, but from the nobility, gentry, and middle classes, studies his map, knows his country, finds his billet, or the shelter of a hill, or the copse which will conceal him. All his movements are regulated by knowledge; his confidence in his generals is sound, because based upon knowledge; his obedience is not hesitating, because it is not blindfold. Suppose, in the interest of publishers, and of course of the nation, we should propose an elementary study of geography, of fortification, of science, to all our volunteers? Let us presume that prizes should be given away, not only for correct shooting, but for correct knowledge in a dozen duties which the present war has shown to be equally important, would not such not only develop new sources of industry, and therefore new sources of pleasure and true happiness, but also add to the usefulness and efficiency of our volunteer force? One thing is certain—the ignorant, the brutal, the unreflecting soldier is now a thing of the past; and publishers may find future consolation in the fact that Shakspeare's phrase has become a fulfilled prophecy: 'Oh, sir; we fight by the book.'"

A Church by Overtime.—The *Louisville Commercial* states that about fifteen years ago two brothers named Clark, carriage-makers, came from Newark, N.J., and settled in Georgetown, Kentucky. They were Episcopalians, but found no one to worship with them in the place. In the course of ten years a handful of churchmen was gathered, and they bought a site for a church. This done, about five years ago the Messrs. Clark designed an edifice, and to-day it stands a monument to their faith, energy, and skill. "With their own hands they quarried the stone: at times when their carriage business was slack, and when a sufficient quantity of stone was ready, they set to work at the foundation upon which to rear the present structure. When the stonework was finally completed by their own exertions, the brothers began upon the woodwork, all of which was planned, made, and fitted by them, the work being done between six o'clock p.m., after their business had ceased, and twelve o'clock at night. In like manner the entire church, from basement to belfry, has been carried to completion by these gentlemen. The church is Gothic in style, and, if built in Louisville, would cost 15,000 dols. The amount of money actually expended in its construction was but 6,000 dols. The Messrs. Clark are now buying old brass and copper from children, which they will use, when enough has been bought, in casting a bell." This church, consecrated by so much toil, has just been completed, and on the 23rd of June it was dedicated by Bishop Cummins.

Value of Land at Wells.—Mr. E. Hippisley, auctioneer, of Wells, sold a freehold estate, consisting of a very good farmhouse, convenient farm buildings, and divers closes of pasture, orchard and arable, containing together nearly 90 acres, and known as the Sugar-loaf Farm. The estate was offered in thirteen lots, and they were all sold, at the following sums:—Lot 1, 39a. 0r. 31p., comprising the homestead, outbuildings, orchard, and land, 4,200*l.*; lot 2, 9a. 2r. 10p. of pasture and arable land, 900*l.*; lot 3, pasture, 5a. 2r. 28p., 500*l.*; lot 4, arable, 1a. 3r. 9p., 170*l.*; lot 5, arable and orchard, 2a. 1r. 16p., 230*l.*; lot 6, pasture, 1a. 1r. 20p., 170*l.*; lot 7, pasture, 6a. 0r. 20p., 170*l.*; lot 8, pasture, 5a. 3r. 11p., 625*l.*; lot 9, pasture, 4a. 2r. 6p., 530*l.*; lot 10, pasture, 7a. 0r. 20p., 930*l.*; lot 11, arable, half an acre, 68*l.*; lot 12, pasture, 1a. 1r. 15p., 172*l.*; lot 13, pasture, 1a. 3r. 6p., 234*l.*; making a total of 9,439*l.*; and with the timber, valued at 137*l.* 2s., the sum of 9,576*l.* 2s., being an average of nearly 107*l.* an acre.

New Building Sites for Dorking.—A few of the leading townsmen, it is said, have joined together and purchased Holloway Farm, situate on the Horsham-road, as a site for building purposes. The land is about 45 acres in extent, and it is contemplated to lay it out in plots of a size sufficient to erect a superior class of villa residences.

Newspaper Press Fund.—Mr. John Byrne, Jun., has been elected Secretary. There were 100 applicants for the post.

A Joiner's Case.—At the Edinburgh Small Debt Court, a case of some interest to joiners has been disposed of by Sheriff Hallard. Robert Watson, joiner, Dalry Park-terrace, sued William Brown, house-carpenter, Charlotte-square-lane, for 8s. 6d., which he alleged to be due to him for work done for the defender on the 16th and 17th of June. The defence was that the pursuer left his employment without giving warning; and that this was contrary to the practice of the trade. Several witnesses were called, who spoke as to the rule of the trade regarding warning. Their depositions were to the effect that, after getting his first pay, a workman was entitled to receive from his master, and to give to him, a week's warning, in the event of either party being dissatisfied; but that before getting his first pay a workman could leave or be dismissed without that notice. The Sheriff held it proved that, up to the first pay, master and servant were upon mutual trial; and that if the employer thought the workman incompetent, or if the workman considered the employer severe or disagreeable, they could part company without warning. He found for the pursuer with expenses.

Manchester New Town-hall. — As we stated in last week's *Builder*, the tender of Messrs. George Smith & Co., of London, has been accepted by the building committee for the shell of the superstructure of the new town-hall, at 192,574*l.*, the lowest of eight tenders. Though this contract does not include the upper portions of the two principal towers, nor the internal finishing of any portion of the building, some idea of the quantities of material and labour involved in it may be gathered from a few of the items gleaned from the calculations upon which the tenders were based. Among these calculations are 20 acres of brickwork, if reduced to 9 in. in thickness; 320,000 cubic feet of stone, on the surface of which is to be expended more than 27 acres of labour. There will be 3¾ miles of shafts in the building, either of stone or granite, and upwards of 3,000 carved caps to crown them. In the vaulting of the corridor, &c., there will be nearly 3 miles of groin ribs. The roofs will contain 2 acres of slating; of fireproof flooring there will be 4½ acres; and of iron beams about 2 miles in length.

The Penzance Serpentine Works.—On the 23rd ult. the lease, plant, and machinery of the extensive premises recently in the occupation of the Penzance Serpentine and Marble Company were submitted to auction by Mr. F. Inman Sharp, of London, by direction of the manager. The stock was sold in the first instance, and comprised some excellent specimens of serpentine, which realised full prices. The lease was next offered; the biddings commencing with Mr. Sims, on behalf of a London charity; but, not being equal to the reserved price, the lot was bought in at 800*l.* The plant and machinery were then sold, without reserve. The sale, says the *Cornish Telegraph*, created considerable excitement in the town, it being reported that a deaf and dumb institution thought of securing the works, which are situated on Newlyn Green, close to the margin of Penzance, in a commanding position, overlooking the Bay, and on the high road from Penzance to the Land's End.

A Self-Feeding Turning Lathe.—This invention, which has been recently patented for Mr. G. Sconcia, is about to be developed by a limited company. One skilled workman, it is said, can readily attend to three or four of them, while the work produced, according to our authority, the *Mining Journal*, is a marvel of perfection. Any desired pattern can be turned out by merely forming the profile upon a plate of soft iron, and plain rods, tapers, and the most complicated designs can be produced with equal facility, and without additional expense. The pattern is fixed around a wheel operated by the screw-worm in connexion with the feed-motion, so that variation when the pattern has to be repeated is practically impossible. Banister rails, billiard cues, table legs, chair rounds, and various other articles of everyday utility to the decorative carpenter, upholsterer, &c., can thus be made with surprising rapidity, and at a low price.

Theatrical Machinery.—The *Gazette des Architectes* (No. 17, 1869-1870), contains a full account, with illustrations, of the stage machinery proposed for the Paris new opera-house, by M. Quéruel, civil engineer. It includes several entirely new arrangements.

Archæological Excursion to the Herefordshire Beacon.—The Archæological Section of the Midland Institute have arranged for an excursion to the camps on the Herefordshire Beacon and Midsummer Hill, Malvern Hills, on Monday, the 12th instant. A Midland train will leave New-street Station at nine a.m., arriving at Malvern Wells about eleven a.m. Thence the members of the section will walk to the Beacon Camp, a distance of about three miles. Luncheon will be provided on the hill about one o'clock, after which Mr. H. H. Lines, of Worcester, will conduct the members of the section over the camps, and will read a paper describing them. Dinner will be provided at Malvern at six o'clock, and the members will return to Birmingham by the train leaving at eight p.m.

Artificial Butter.—The manufacture of artificial butter is (says the *Food Journal*) seriously contemplated in France. A Parisian contemporary states that M. Meye, of Paris, has taken out a patent for the manufacture of artificial butter, which, according to the journal in question, is to be used as a substitute for that ordinarily exported to England and Russia. The description of the process is, that animal fat is subjected to great pressure, by which the stearine is extracted for making candles; an oily material being at the same time obtained, the composition of which is identical with that of butter. M. Meye says that he subjects this animal oil to a succession of scientific processes and manipulations till he produces what he calls butter. He has the most sanguine anticipations about the success of his "invention."

The Tower Subway.—At the half-yearly general meeting of this company, the chairman, Mr. P. Barlow, in moving the adoption of the report, said he could confirm the statement in the report of the engineer as to the satisfactory condition of the works. The subway had been opened only two months, and the receipts amounted to 30*l.* a week. Arrangements had been made to diminish the working expenses without impairing the efficiency of the undertaking. They had made the necessary arrangements with respect to the safety apparatus, which had received the approval of the Government inspector. There was every reason to believe that the undertaking would pay the shareholders 15 per cent. The report was agreed to unanimously.

Two Hundred Thousand Wooden Legs. "We have from good authority a fact which will, in some slight degree, bring home to our readers the extent and the reality of the murderous work which has taken place in the east and north of France. It comes to us from a Prussian source, and is almost grotesque in its hideous suggestiveness:—two hundred thousand wooden legs have been ordered by the Prussian Government for the use of its soldiers!" So says the *Eastern Post*. In the war of 1866, the wholesale purchaser of these useful articles, King Wilhelm, shed tears at the spectacle of *one* man whose arms and legs were all gone, and who implored his sovereign to order some one to shoot him, for he had no means himself of ending his misery. Whether Bismark's *expressive* eyes were so suffused, sympathetically with his master's, we know not.

Petroleum in America.—The petroleum yield for July last was extraordinarily large, averaging over 15,000 barrels per day, being about 2,000 barrels more than the running average two months before. Three days only of this production suffices to furnish as much petroleum as the entire export of 1861 (1,500,000 gallons). Whereas more than 60,000,000 gallons have been shipped since Jan. 1, 1870. It is going to all countries abroad as usual, excepting to Germany and France. The abundant production, in face of European complications, has brought down the price to 22 cents.

London and Middlesex Archaeological Society.—A general meeting of this society will be held at Monken Hadley, on Tuesday, the 13th, at half-past eleven o'clock, when papers will be read as follows:—"The Antient Topography of Barnet," by Mr. W. H. Black, F.S.A.; "Barnet and its Neighbourhood," by Mr. T. F. Peacock. The society will then proceed to Monken Hadley Church, where a paper will be read by the Rev. F. C. Cass; thence to South Mims Church, when Mr. E. Wright will give an account of the church and parish; and, after a collation, they will go to Chipping Barnet.

Science and Art School, Clerkenwell Green.—The prizes to the successful students at the Government examinations held in connexion with this school were distributed on Saturday evening last by Mr. C. Lamport, who presided on the occasion. Mr. Hodgson Pratt, who founded the school last winter, said that although the attendance had not been very encouraging, he thought it would be wrong to abandon the experiment until it had had a longer trial. He hoped that workmen and apprentices would join the classes, which would be re-opened so soon as a sufficient number of applications had been received. Addresses were made on the importance of technical instruction for all classes of the industrial community.

Strange Conduct of Workmen.—A deplorable fatality is reported from Middleton. A workman, named Dyson, employed at Messrs. M'Dougall's chemical works, entered a retort, for the purpose of cleaning it. He soon felt that he was being overcome by an accumulation of foul air; and, on his crying for assistance, a young man named Thomas Holland entered the retort, and with his aid Dyson was drawn out in an insensible state. The workmen in the place appear to have got confused, and, while directing all their energies to the restoration of Dyson, forgot that Holland was still in the retort. After Dyson had recovered, Holland was thought of; but by that time he had been killed by the fatal vapour.

Depression in the Slate Trade.—The slate districts of North Wales are now suffering from a great falling off in the demand, and consequent diminution of employment for labour. According to the *Investment Circular*, even at the Penrhyn Quarries, where for many years the demand has been greater than the power of supply, large numbers of the quarrymen have been discharged, and assistance given them by Lord Penrhyn to enable them to travel and seek employment elsewhere,—strong evidence that the depression is expected to be protracted.

Preservation of Stone.—At the recommendation of Professor Abel, chemist to the War Department, the process invented by Messrs. Gay & Co., of Alton, Hants, for waterproofing and preserving stone and other buildings, to which we referred some time ago, is, by order of the Office of Works, to be applied to a portion of the decayed stone-work at the Houses of Parliament.

Club Rebuilding and Redecoration.—The club-house of the Junior United Service Club, in Charles-street, St. James's, is now closed, preparatory to the partial rebuilding and entire redecoration and refurnishing of the interior. The cost of reconstruction and embellishment will be very large.

The Metropolitan Board of Works.—This Board will meet on Friday, the 23rd inst., when arrangements will be made for the election of a chairman in the place of Sir John Thwaites.

TENDERS.

For house at King's Norton, Birmingham, for Mr. C. E. Ryder. Mr. William Hale, architect. Quantities supplied:—

W. & J. Webb	£1,385	0	0
Partridge	1,320	0	0
Jones	1,313	0	0
Matthews	1,275	0	0
Moffatt	1,259	0	0
Blore	1,250	0	0
Ravenscroft	1,249	0	0
Surman	1,245	0	0

For alterations and additions at Dalston Junction, for the North London Railway Company:—

Axford	£7,810	0	0
Wittaker	7,590	0	0
Mansfield, Price, & Co.	7,283	0	0
Abrahams	6,987	0	0
Eaton & Chapman	6,951	0	0
Hill, Keddell, & Waldram	6,874	0	0
Watts	6,674	0	0
Snowball	6,659	0	0
Parsons & Telling	6,435	0	0
Doverwood & Co.	6,369	0	0
Blease	5,995	0	0
Wicks, Bangs, & Co.	5,970	0	0

For alterations and re-fitting at the Pitt's Head, Old-street. Messrs. G. Knight & Pickering, architects:—

Langmead & Way	£939	0	0
Elms	895	0	0
Stead	893	0	0

For the chancel and transepts only of the church for the new district of Newbarns, near Furness Abbey, for the Rev. Thos. Goss. Messrs. E. Habershon & Brock, architects:—

Court	£1,968	0	0
Ormandy	1,937	0	0
Gradwell	1,740	0	0
Garden	1,630	0	0

For the new Rectory House of St. Paul's, Carlisle, for the Rev. F. Richardson. Messrs. E. Habershon & Brock, architects:—

C. & J. Armstrong (accepted)	£1,600	0	0

For the erection of chapels at the New Cemetery, Romford, Essex. Mr. E. C. Allum, architect:—

Wood	£2,103	0	0
Chessum	2,100	0	0
Haynes	1,896	0	0
Blease	1,704	0	0
Potter (accepted)	1,694	0	0

For alterations and additions to Nos. 57, 59, & 60, Gedling-street, Dockhead, for Mr. G. J. Grace. Mr. F. N. Kemp, architect. Quantities supplied by Mr. Edwin J. Styles:—

Martell	£550	0	0
Kent	520	0	0
Dredge	489	15	0
Churchill (accepted)	397	0	0

For the erection of a house, at Caterham Junction, Surrey, for Mr. W. H. Heath. Mr. Ridge, architect. Quantities supplied:—

Cooper (accepted)	£681	0	0

For pulling down and re-building 137, Fenchurch-street, for Mr. C. J. Kim. Mr. F. Johnstone, architect. Quantities supplied by Mr. C. Kirkby:—

Newman & Mann	£3,285	0	0
Killby	3,258	0	0
Conder	3,224	0	0
Axford	3,210	0	0
Hill, Keddell, & Waldram	3,197	0	0
Colls & Sons	3,181	0	0
King & Sons	3,126	0	0
Robinson (accepted)	2,984	0	0

For new shops and premises and alterations and additions, for Mr. James Wigan, at Mortlake. Mr. Pope, architect:—

Searle	£2,745	0	0
Little	2,706	0	0
Wigmore	2,587	10	0
Dove, Bros.	2,535	0	0
Avis	2,522	0	0
Brown & Robinson	2,478	0	0
Patrick & Son	2,461	0	0
Bishop	2,450	0	0
Adamson	2,430	0	0
Sharpington & Cole	2,391	0	0
Bowling	2,296	0	0

For Cottage Hospital, Seacombe, Cheshire. Mr. W. J. Mason, architect. Quantities by Mr. Geo. Northcroft:—

Ellis	£746	0	0
J. & T. Mason	725	0	0
Haigh & Co. (accepted)	725	0	0
Allen (too late)	713	0	0

Accepted for engineering works and gas-fittings, at Poplar and Stepney Sick Asylum, Bromley, Middlesex. Messrs. Arthur & C. Harston, architects:—

For steam engine and boilers and the fitting-up of the steam laundries, and for cooking apparatus, and fitting-up kitchen and scullery	Frazer & Sons
For cold-water tanks and mains, fire mains, hot water warming, hot water supply, and for the supply and fitting-up of manual-power lifts	Jeakes & Co.
For gas-fitting work throughout	Fulton

TO CORRESPONDENTS.

J. R.—M. L.—W. P.—J. M.—A. & C. H.—Mrs. R.—S. F.—J. K.—P.—B. S.—C. B.—H. B.—P. J. T.—P. C.—Preston.—F. W. I. N.—A. C. M.—G. N. B. I.—R. P. W.—S. S. C.—J. L.—E. H.—A. H.—E. I. B.—C. C. H.—C. J. A.—W. J. M.—W. T. P.—C. B. A.—E. W. B.—H. A. (we shall be happy to receive paper on Steel).—Anxiety's (take a lawyer's advice).—E. T. (contrary to our custom).—J. T. (yes, the Royal Engineers).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of Tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

NOTICE TO SUBSCRIBERS.

The Publisher cannot be responsible for TESTIMONIALS *left at the Office in reply to Advertisements, and strongly recommends that* COPIES ONLY *should be sent.*

Advertisements cannot be received for the current week's issue later than **THREE o'clock, p.m.,** *on THURSDAY.*

☞ *NOTICE.—All Communications respecting Advertisements, Subscriptions, &c., should be addressed to "The Publisher of the Builder," No.* 1, *York-street, Covent Garden. All other Communications should be addressed to the "Editor," and* NOT *to the "Publisher."*

ADVERTISEMENTS.

TOWNS DRAINAGE and SEWAGE UTILIZATION COMPANY.
CHAIRMAN—Sir William Wiseman, Bart. K.C.B.
ACTING ENGINEER—Mr. Bailey Denton, Whitehall-place.
This Company prepares plans, specifications, &c. and reports on plans already prepared; supplies the funds necessary for the execution of the works, and if required, undertakes the execution of such works. The Company also undertakes to purchase lands for the reception of sewage.—Particulars obtained of Messrs. Bailey Denton, Son, & North, Whitehall-place; or of Mr. HENRY DUDLEY COOPER Secretary, No. 41, Parliament-street, S.W.

DOULTON & CO.

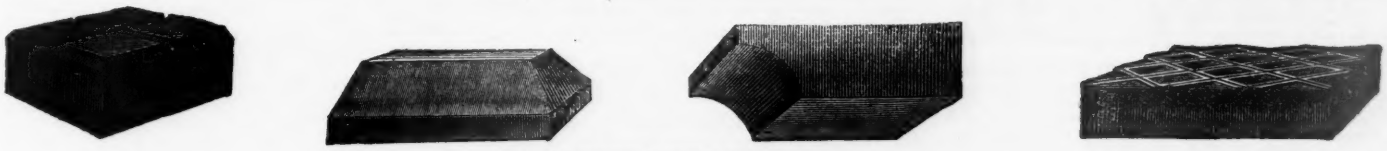
HAVING EXTENSIVE WORKS IN

LAMBETH, the MIDLAND DISTRICT, and the NORTH, can ECONOMISE the Cost of Carriage,

And are thus able to Supply their various Manufactures at the Lowest possible Prices

In any Part of the Kingdom; and can also export from London, Liverpool, or Gloucester.

BLUE STAFFORDSHIRE WARE.



THESE GOODS MAY BE CONSIGNED

DIRECT to ANY PART of the COUNTRY, put into BOATS at the WORKS at Rowley, or into TRUCKS at the RAILWAY STATIONS adjoining.

MAY BE HAD IN LONDON, at their WHARFS at

LAMBETH, OR CROWN WHARF, VICTORIA PARK, E.

Or may be sent by Rail direct to ST. PANCRAS, CAMDEN, or PADDINGTON STATIONS; also at

GRANVILLE WHARF, BIRMINGHAM; and SOHO STREET, LIVERPOOL.

DOULTON'S STONEWARE PIPES.

PIPES FOR DRAINAGE,
From 2 in. to 30 in. in diameter.

CARRIERS FOR SEWAGE, &c.
With or without Sockets.

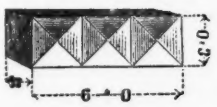
DOULTON'S ARCHITECTURAL TERRA COTTA.

Messrs. DOULTON & CO. are now paying special attention to this branch of their Manufacture, and invite Architects and Builders to view their STOCK at LAMBETH. Specimens also on view at the Crystal Palace; and at the Architectural Museum, Conduit-street, W.

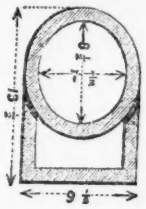
TERRA-COTTA of EVERY KIND MANUFACTURED by DOULTON & CO.

AIR BRICK.

DENTAL BRICK.

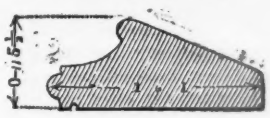


COMBINED SMOKE AND AIR FLUE.

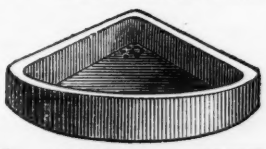


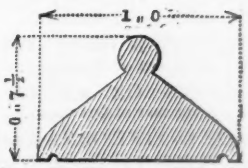
CHIMNEY PARTITION.

WALL COPINGS.



STONEWARE SINK.





DOULTON'S PATENT INVERT AND JUNCTION BLOCKS,

And IMPROVED STREET and YARD GULLIES.

DUTCH TILES; RED, BLUE, and BUFF PAVING TILES; AIR BRICKS; DAMP PROOF COURSE, &c.

STONEWARE SINKS, highly Glazed, of great Strength, Incorrosive and Non-absorbent.

ALL KINDS OF SANITARY WARE.

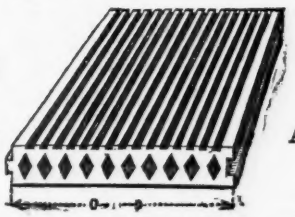
Fire-clay Goods of all kinds. Plumbago and other Crucibles.

All descriptions of GENERAL STONEWARE, CHEMICAL APPARATUS, FILTERS, AIR-TIGHT JARS, BOTTLES, &c. for Exportation.

DOULTON'S

IMPROVED DAMP PROOF COURSE.

SEE SEPARATE



ADVERTISEMENT.

SEPARATE LISTS OF PRICES ON APPLICATION.

KELLY'S PRACTICAL BUILDERS' PRICE-BOOK; or, Safe Guide to the Valuation of all kinds of Artificers' Work; with the Modern Practice of Measuring, and an Abstract of the New Building Act for Regulating the Construction of Buildings. Revised and Corrected by New Calculations upon the present Value of Materials and Labour. Arranged by an Architect of eminence, assisted by several experienced Measuring Surveyors. Illustrated and exemplified by Steel Engravings and numerous Woodcuts. Royal 8vo. price 8s. neatly bound.

London: Published by T. KELLY, Paternoster-row; SIMPKIN & MARSHALL; and may be had of all Booksellers.

Of whom may be had, new Editions in Quarto, of the following Practical Architectural Works:—

1. PETER NICHOLSON'S PRACTICAL CARPENTRY, JOINERY, and CABINET MAKING. Revised by TREDGOLD: being a new and complete System of Lines, for the Use of Workmen, founded on Geometrical and Mechanical Principles. Ten Parts at 3s. or in boards, 30s.; containing upwards of 120 Steel Plates, and numerous Woodcut Diagrams.

2. PETER NICHOLSON'S PRACTICAL MASONRY, BRICKLAYING, and PLASTERING (revised by TREDGOLD) both plain and ornamental; containing a new and complete System of Lines for Stone-cutting, for the Use of Workmen; the Formation of Mortars, Cements, Concrete, to which is added a variety of new Designs for Mural Tablets, Tombs, Gravestones for Cemeteries, &c. &c.; and a Description of the various Materials employed. Ten Parts at 3s. or in boards, 30s.; containing upwards of Ninety Steel Plates, and numerous Woodcuts.

3. TREDGOLD and NICHOLSON'S Theoretical and Practical Treatise on the FIVE ORDERS of ARCHITECTURE; containing plain and simple Rules for Drawing and Executing them in the purest style, including an Historical Description of Gothic Architecture. Illustrated by upwards of One Hundred Steel Engravings, executed by Artists of first-rate talent, including numerous Diagrams, &c. Twelve Parts at 3s. or in boards, 36s.

4. DESIGNS for COTTAGE and VILLA ARCHITECTURE, containing Plans, Elevations, Sections, Perspective Views, and Details, for the Erection of Cottages and Villas. By S. H. BROOKS, Architect. Beautifully engraved on steel, with Direction for Building, and the estimated cost of each edifice. Twelve Parts at 3s. or in boards, 39s.

5. DESIGNS for PUBLIC BUILDINGS, consisting of Plans, Elevations, Sections, Perspective Views and Details of Churches, Chapels, Schools, Almshouses, Gas Works, Markets, and other Buildings for public purposes. By S. H. BROOKS, Architect. Beautifully engraved on steel. Ten Parts at 3s. or 32s. boards.

6. The HOUSE DECORATOR and PAINTER'S GUIDE, containing a Series of Designs for Decorating Apartments with taste, and suited to the various Styles of Architecture. By H. W. and A. ARROWSMITH, House Decorators to Her Majesty. Ten Parts at 3s. or in boards, 32s.

7. The HOUSE PAINTER, or DECORATOR'S COMPANION, containing a complete Treatise on the Art of House Painting, Graining, and Marbling, including the Origin of Colour, the Laws of Harmonious Colouring, the Manufacture of Pigments, Oils, Varnishes, &c. By W. M. HIGGINS, Esq. Accompanied by actual Specimens of Hand-brush Graining and Marbling. Ten Parts at 3s. or in boards, 32s.

The ENGINEERS' and MECHANICS' ENCYCLOPÆDIA: a new and enlarged Edition, comprehending Practical Illustrations of the Machinery and Processes employed in every Description of Manufacture of the British Empire. Illustrated by upwards of 2,000 Wood Engravings. By LUKE HERBERT, Civil Engineer, &c. The rapid progress of Mechanical Science has developed many of the important facts since the first publication, in 1835, of the Encyclopædia. The inventions and discoveries recently made have engaged the sedulous attention of the Editor; for, as the value of each was tested by experiment, a description was accordingly prepared. By the selection of new articles, and care in the revision of old ones, this edition has now become systematically enriched; so that it may be received as fully and faithfully expressing "the existing state of Engineering and Mechanism, adapted to the wants of Practical Men." In two large 8vo. vols. cloth lettered, price 30s.

Published at 5*l.* 5s. offered for 3*l.* 16s.

OWEN JONES'S GRAMMAR of ORNAMENT.

Impl. 4to. 112 superb Plates in gold and colours, with Letterpress descriptions, extra cloth, gilt edges.

ORNAMENT of SAVAGE TRIBES. — See Owen Jones's Grammar of Ornament.

EGYPTIAN ORNAMENT.—See Owen Jones's Grammar of Ornament.

ASSYRIAN and PERSIAN ORNAMENT.—See Owen Jones's Grammar of Ornament.

GREEK ORNAMENT.—See Owen Jones's Grammar of Ornament.

POMPEIAN ORNAMENT.—See Owen Jones's Grammar of Ornament.

ROMAN ORNAMENT. — See Owen Jones's Grammar of Ornament.

BYZANTINE ORNAMENT.—See Owen Jones's Grammar of Ornament.

ARABIAN ORNAMENT.—See Owen Jones's Grammar of Ornament.

TURKISH ORNAMENT.—See Owen Jones's Grammar of Ornament.

MORESQUE ORNAMENT.—See Owen Jones's Grammar of Ornament.

PERSIAN ORNAMENT.—See Owen Jones's Grammar of Ornament.

INDIAN ORNAMENT.—See Owen Jones's Grammar of Ornament.

HINDOO ORNAMENT.—See Owen Jones's Grammar of Ornament.

CHINESE ORNAMENT.—See Owen Jones's Grammar of Ornament.

CELTIC ORNAMENT.—See Owen Jones's Grammar of Ornament.

MEDIÆVAL ORNAMENT.—See Owen Jones's Grammar of Ornament.

RENAISSANCE ORNAMENT. — See Owen Jones's Grammar of Ornament.

ELIZABETHAN ORNAMENT. — See Owen Jones's Grammar of Ornament.

ITALIAN ORNAMENT. — See Owen Jones's Grammar of Ornament.

LEAVES and FLOWERS from NATURE.—See OWEN JONES'S GRAMMAR of ORNAMENT.

Impl. 4to. 112 superb Plates in gold and colours, extra cloth, gilt edges. Published at 5*l.* 5s. offered at 3*l.* 16s.

BERNARD QUARITCH, PICCADILLY, LONDON.

Just published, bound in cloth, price 1s. 6d. or post free for 20 stamps.

STABLES and STABLE FITTINGS: a Treatise on the best Methods of Constructing and Fitting-up Stables.

Published by the ST. PANCRAS IRONWORK COMPANY, Old St. Pancras-road, London, N.W.

Price 4s.; post-free, 4s. 4*l*.

LAXTON'S BUILDERS' PRICE BOOK, for ARCHITECTS, ENGINEERS, BUILDERS, CONTRACTORS, SURVEYORS, and all the BUILDING TRADES.

For fully fifty years this work has been considered the chief authority on matters connected with the building trades. Its use, even on one occasion, will probably repay the cost of the book ten times over, and instances will continually occur in which the consultation of its pages will effect a saving of many pounds.

London: MORGAN & CHASE, 38, Ludgate-hill.

And may be ordered of any Bookseller in the kingdom.

ANCIENT IRISH ARCHITECTURE Will shortly be Published, 10 LITHOGRAPHIC DRAWINGS, with descriptive Letter-press, accompanied by 6 large Photographs, illustrating the Architecture and present Condition of ARDFERT CATHEDRAL, Co. Kerry.

By ARTHUR HILL, B.E. A.R.I.B.A.

Price 12s. 6d.

*** The number of copies being limited, those desirous of subscribing are requested to send their names to the Author, No. 22, GEORGE'S STREET, CORK.

ZADKIEL'S ALMANAC for 1871, now ready, contains:—The Year of Fate for France. Remarkable prediction at page 18 of Zadkiel's Almanac for 1853, touching the Emperor of the French:—"But let him not dream of lasting honours, powers, or prosperity. He shall found no dynasty, he shall wear no durable crown, but in the midst of deeds of blood and slaughter, with affrighted Europe trembling beneath the weight of his daring martial hosts, he descends beneath the heavy hand of fate, and falls to rise no more; with none to mourn him, none to inherit his renown, none to record his good deeds, and none to lament his destruction."

J. G. BERGER, London.

T. A. RICHARDSON, ARCHITECTURAL ARTIST, late of Symond's Inn.—PERSPECTIVES in OUTLINE or COLOUR. Highest references. Moderate terms. Established eighteen years.—362, Gray's-inn-road, W.C.

DESIGNS (only), of every description PREPARED by a GENTLEMAN, who has been engaged confidentially, and almost exclusively, upon this branch of art, for more than fifteen years.—Address, ARCANUM, Hawker, Newsvendor, Camberwell-gate, S.E.

A PARTNER, with 600*l.* is REQUIRED in an established Gentlemanly Business. It is not necessary that he be a practical man, but one knowing the duties of a Surveyor's Office would be preferred.—Address, 254, Office of "The Builder."

PARTNER REQUIRED in an Old-Established BUILDING TRADE. Capital required, about 450*l.* which may be reduced. Good opportunity for a practical Man.—Address, Alpha, Post Office, Birmingham.

PARTNERSHIP.—To WOOD CARVERS, &c.—WANTED, by a Young Man, who served his time in the trade, EMPLOYMENT, for a year or so, with the ulterior motive of joining the principal, or succeeding to the business after a stated time.—Address, CARVER, Fisher's Subscription Library, Clapham.

CLERK of WORKS.—WANTED, by the Cleethorpes Sewer Authority, Lincolnshire, a duly qualified Person to act as CLERK of WORKS in the carrying out of the Cleethorpes Sewerage, which works will consist of the laying of about five miles of sanitary pipes, and construction of brick tanks, street gullies, and other outfall works, &c. No person need apply unless he has had experience, and is thoroughly versed in works of the same character. Tenders, enclosing testimonials, and stating experience, and the amount per week required, must be addressed, sealed, and forwarded to "Mr. JOSEPH ANNINGSON, Chairman of the Sewer Authority, Cleethorpes, Lincolnshire," before THREE o'clock p.m. on FRIDAY next, SEPTEMBER 16th.

ALFRED E. SKILL, Engineer.

Brewery-street, Great Grimsby, September 7th, 1870.

TO CARPENTERS, JOINERS, AND CABINET MAKERS.

THE TRUSTEES of MRS. NEWTON'S CHARITY will meet at ELEVEN o'clock on FRIDAY, the 16th of SEPTEMBER inst. at St. JAMES'S VESTRY HALL, PICCADILLY, to receive personal Applications from masters carrying on the above trades, and being householders, for a BOY, aged 14 years, as an IN-DOOR APPRENTICE, with a premium of 25*l.* and suitable clothing; at which meeting the boy selected will be in attendance.—Any further information may be previously obtained at the said Vestry Hall, from ELEVEN to THREE o'clock daily.

TIMBER TRADE. — TRAVELLER WANTED, for Town and Suburbs. Also, a SALESMAN or YARD FOREMAN.—Inquiries for either of above by letter, 185, Office of "The Builder."

WANTED, a competent ASSISTANT, for the usual routine of an Architect and Surveyor's Office.—Address, J. G. (Messrs. Blades, East, & Blades), Abchurch-lane, City. State late engagements, class of work, and salary required.

WANTED, a thoroughly practical, trustworthy Man, to TAKE the PAINTING, PAPERHANGING, and COLOURING (Labour only) of a number of cottages near London.—Address, 243, Office of "The Builder."

WANTED, a FEW MASONS. Wages, 26s. per week. Working hours, from six in the morning to half-past five o'clock in the evening; Saturday, one o'clock.—Apply to JOHN HOLLAND, Navigation Old-yard, Northwich, Cheshire.

WANTED, by a Gentleman who has been articled for three years to a Land Surveyor, and who has 500*l.* or 600*l.* at his command, a CLERKSHIP in the office of a Surveyor or Land Agent, with a view to Partnership.—Address, H. S. B. 5½, Pavilion-buildings, Brighton.

WANTED, a RE-ENGAGEMENT, by a thoroughly practical Man, as GENERAL FOREMAN or CLERK of WORKS (in town or country). Is thoroughly experienced in the management of all trades, setting out and measuring up works and the preparation of detail drawings, &c. Salary moderate. First-class references and testimonials.—Address, 192, Office of "The Builder."

WANTED, a SITUATION, as Improver to the CARPENTERING and JOINERING. Aged 22.—Address, J. G. X. 98, Jermyn-street, St. James's, S.W.

WANTED, by an ARCHITECT and SURVEYOR, of sixteen years' London experience, an ENGAGEMENT, for the whole or part of his time.—Address, 181, Office of "The Builder."

TO PLUMBERS AND BUILDERS.

WANTED, by a steady Young Man, a SITUATION as PLUMBER, or good Three-Branch Hand. Reference if required.—Address, PLUMBER, 10, Charles-street, Islington-green, London.

TO CARPENTERS AND BUILDERS.

WANTED, a SITUATION, in a respectable shop, as an IMPROVER.—Address, W. A. G. Post-office, West Ham.

TO PLUMBERS AND BUILDERS.

WANTED, by the Advertiser, a SITUATION, as thorough practical PLUMBER and GASFITTER. Can do plain zincwork. Good reference, if required. Aged 27, married.—Address, T. PONTING, 48, Poland-street, Oxford-street, W.

WANTED, a SITUATION, as BUILDER'S FOREMAN or CLERK of WORKS. A Joiner. Practically acquainted with all branches. Has just finished some contracts for a builder, by whom he can be well recommended, also from other builders and architects who have employed him.—Address, H. HYDE, 27, Church-street, West Ham, Essex.

TO BUILDERS AND PLUMBERS.

WANTED, by the Advertiser, who is a first-class PLUMBER, a constant SITUATION or JOB. Can do plain gas or zinc work if required.—Address, A. B. 66, Philip-street, Queen's-road, Wandsworth road.

WANTED, a RE-ENGAGEMENT, as OUT-DOOR or GENERAL FOREMAN. Carpenter by trade. First-class reference.—Address, T. H. 43, Baxendale-street, N.E.

TO BUILDERS.

WANTED, by a Young Man, a RE-ENGAGEMENT as CLERK. Is a rapid calculator, and is thoroughly acquainted with bookkeeping, prime costs, making out accounts, billing up dimensions, and the usual routine. Terms moderate.—Address, C. D. 24, Howland-street, Fitzroy-square, W.

TO ARCHITECTS.

WANTED, a RE-ENGAGEMENT, as ASSISTANT, by a neat and accurate DRAUGHTSMAN. Perspective, competition, and detail drawings. Age 23. Reference to present employer.—Address, S. G. 4, Kendrew-street, Darlington.

TO BUILDERS AND DECORATORS.

WANTED, a RE-ENGAGEMENT, by a Young Man. Can estimate, measure up work, bill, a good bookkeeper, thoroughly conversant with office work, and fully competent to undertake the management. Highest testimonials as to abilities.—Address, 234, Office of "The Builder."

TO BUILDERS.

WANTED, by a CARPENTER, a JOB. Bench or fixing. Moderate wages, if constant. London or suburbs.—Address, J. T. 8, Thetford-place, New Walworth, S.E.

WANTED, a RE-ENGAGEMENT, as FOREMAN of JOINERS or FOREMAN of WORKS. Is thoroughly well up in all branches of the building trade. Good references. No objection to be Working Foreman, or will take the work by contract.—FOREMAN, Palais Royal, Argyll-street, Regent's-circus.

TO ARCHITECTS AND SURVEYORS.

WANTED, a RE-ENGAGEMENT, by a Young Man. Is a neat draughtsman, can prepare drawings from rough sketches, and assist in taking out quantities. Good testimonials.—Address, S. R. 22, Millman-street, Bedford-row, W.C.

TO BUILDERS, SURVEYORS, &c.

WANTED, a RE-ENGAGEMENT, by a London FOREMAN, of twenty years' experience in all branches. Good draughtsman, quantity-taker, &c. Terms moderate.—Address, A. Z. Post-office, Watford.

TO FURNISHING IRONMONGERS, SMITHS, AND BUILDERS.

WANTED, a SITUATION, by a first-class Mechanic, in the SMITH, BELLHANGING, and GASFITTING. Close ranges, and all kinds of bath, steam, and hot-water work. First-class reference. No objection to piecework.—Address, A. Z. 13, Victoria-grove, Morpeth-road, Victoria Park, N.E.

TO BUILDERS, IRONMONGERS, &c.

WANTED, by an experienced and practical Man, a RE-ENGAGEMENT as FOREMAN, or Contract Work. Accustomed to management and repair of machinery; manufacture of Mediæval and other iron and brass work. Gas, hot-water, kitchen, and bell work; also electric bells. Drawings and estimates.—Address, 193, Office of "The Builder."

TO BUILDERS AND PLUMBERS.

WANTED, by a Young Man, a JOB, as PLUMBER, or Taree-Branch Hand. Can do gasfitting and plain zincwork. Good references.—Address, C. B. No. 7, Brook-green-road, Hammersmith, W.

WANTED, by a Young Man, aged 19, who has been brought up in the Building line, a SITUATION, or JOB as Improver to a Bricklayer. Would articles himself for two years. Wages not so much an object as a chance for improvement.—Address, J. J. F. 24, Reeves-road, Bromley-by-Bow, London.

WANTED.—TIME-KEEPER or STORE-KEEPER.—A practical, Middle-aged Man, who has kept the time of upwards of 300 men on a large job (now completed) is open to an ENGAGEMENT at home or abroad. First-class testimonials.—Address, E. W. G. 11, Clifton-crescent, Asylum-road, Peckham.

TO PLUMBERS AND BUILDERS.

WANTED, by the Advertiser, aged 26, a SITUATION as PLUMBER, GASFITTER, and PLAIN ZINC-WORKER. Understands all kinds of new and old work.—Address, J. M. M. 29, Clarendon-street, Clarendon-square, St. Pancras, N.W.

TO BUILDERS AND DECORATORS.

WANTED, by a good PAPER-HANGER, PAINTER, and GLAZIER, a PERMANENCY.—Address, W. J. 65, Pigott-street, East-India-road, E.

WANTED, by an experienced Man, a SITUATION as YARD FOREMAN, in a Builder's or Timber Merchant's establishment, or as Wharf Foreman, in a small establishment, with the prospect of a Partnership in about twelve months.—Address, with full particulars, to 223, Office of "The Builder."

WANTED, EMPLOYMENT by a CARPENTER and JOINER, used to all kinds of fittings and alterations. Piece-work or otherwise. Good knowledge of plans, specifications, and accounts.—Address, D. S. W. 78, Westminster Bridge-road, S.W.

TO MASTER BUILDERS AND PLUMBERS.

WANTED, by a Young Man, a Constant SITUATION as PLUMBER, or on a JOB. Can do Painting and Glazing. Good reference if required.—Address, L. G. 18, Jacob's-well Mews, Manchester-square, W.

TO PLUMBERS AND BUILDERS.

WANTED, by a good PLUMBER, GASFITTER, &c. a Constant SITUATION. No objection to fill up his time at painting.—Address, B. B. 248, Portobello-road, Notting-hill, W.

TO HOUSE JOINERS AND BUILDERS.

WANTED, by a Young Man, a SITUATION as IMPROVER. Has been some time away from the trade. Wages no object.—Address, A. B. 19, Dalby-street, Kentish Town.